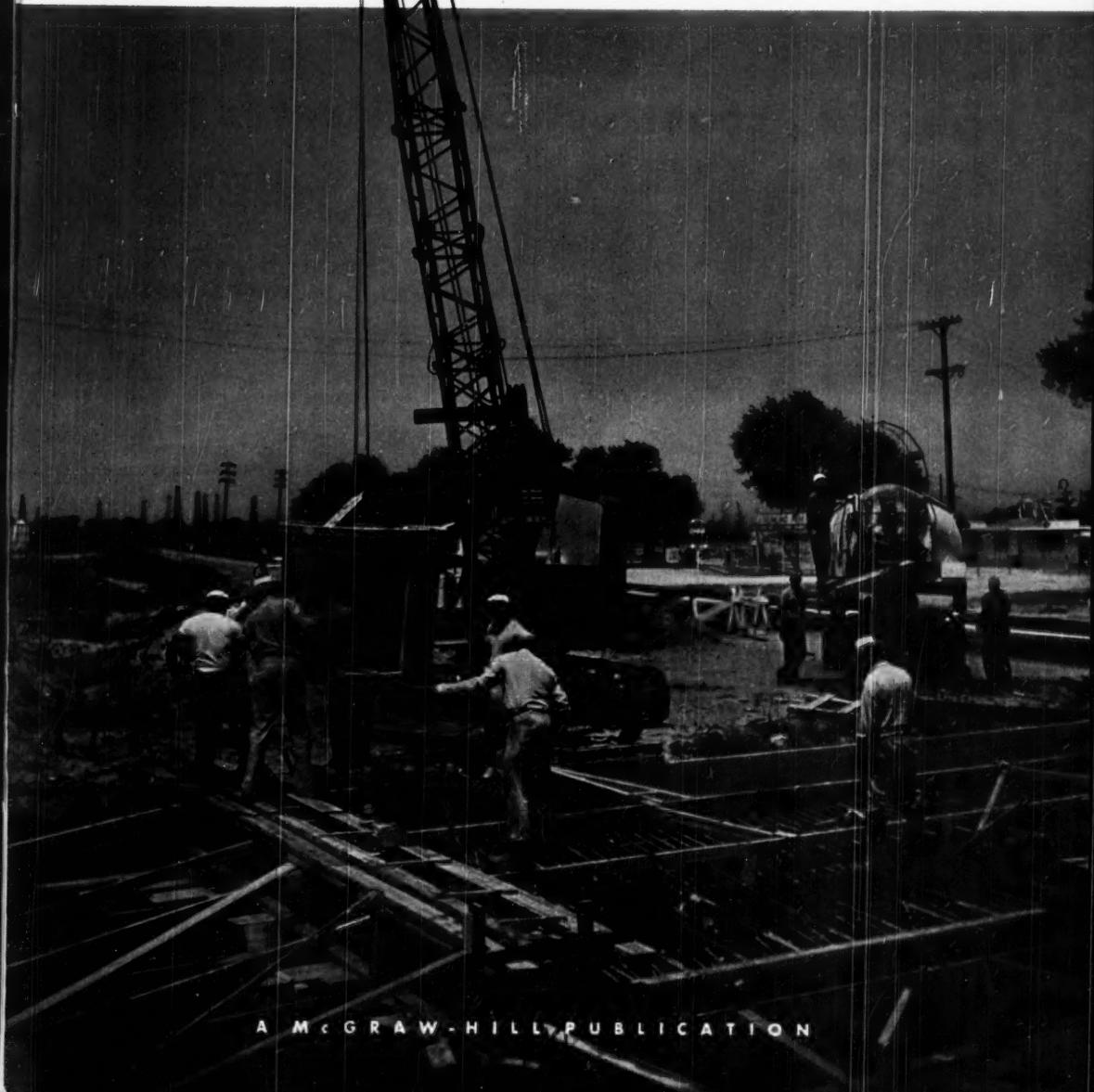
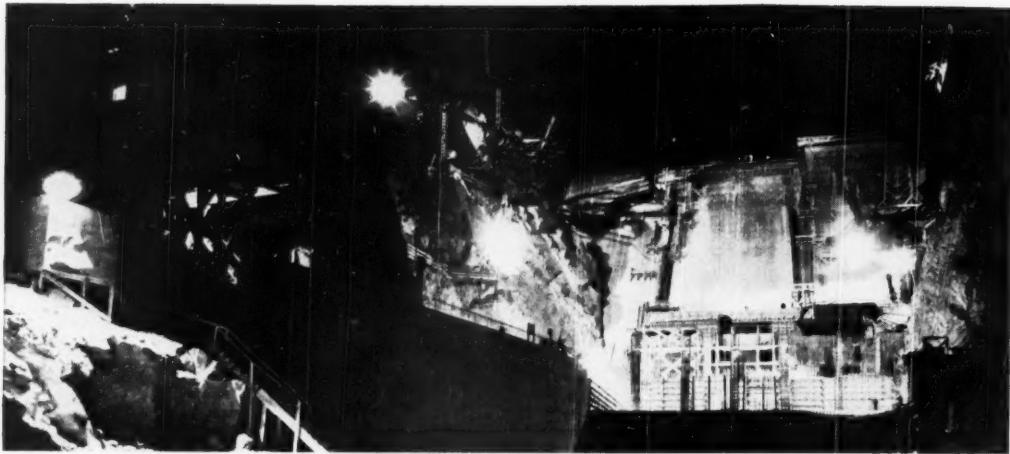


# CONSTRUCTION METHODS AND EQUIPMENT

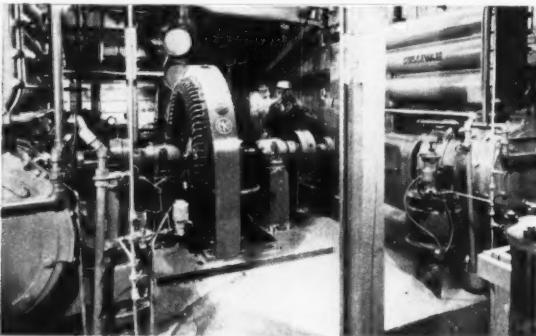
May 1950



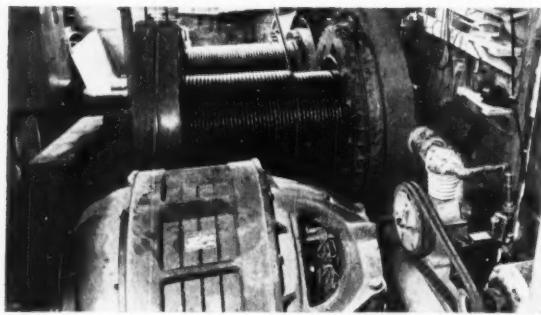
A McGRAW-HILL PUBLICATION



## speeding construction at Kortes Dam



All air pressure for job comes from compressors driven by a 500-hp G-E motor.



The 185-foot boom hoist is driven by a 200-hp General Electric induction motor.

*...Electrically*

### G-E Equipment Operates Around the Clock to Meet Schedule

To maintain their rigorous work schedule at the Bureau of Reclamation's Missouri-Basin Kortes Dam project (Kortes, Wyoming), Morrison-Knudsen Co., contractors, must keep on the job 24 hours a day. Thanks to modern machinery *electrified by General Electric*, work proceeds at this accelerated pace without the periodic shutdowns usually expected in this kind of job.

When you electrify with G-E motors and control supplied from G-E power distribution systems, you get safer, faster, more efficient operation. You'll also have the added advantage of engineering assistance in application, installation, and service—regardless of job location. Apparatus Dept., General Electric Co., Schenectady 5, N. Y.

*Ask him Today!*

Whether you buy or build construction equipment, your G-E representative can show you how to do a better job—at lower cost—by complete electrification. Write him now, and he'll call on you at your convenience.

*Electrified Construction*  
BETTER PRODUCT LOWER COST

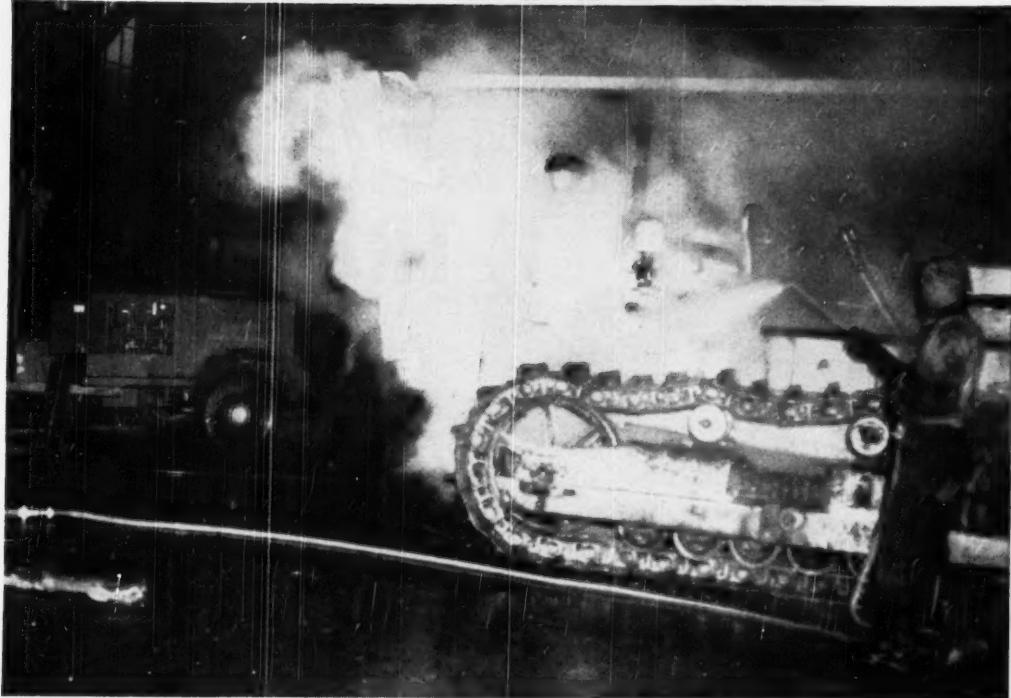
GENERAL  ELECTRIC

664-9

Research  
keeps

# B.F. Goodrich

first in  
rubber



## Steam handling made safe by B. F. Goodrich Burstproof hose

*Has new cover 100% tougher, yet costs no more  
than regular steam hose*

THE safest, strongest steam hose in service: B. F. Goodrich Burstproof steam hose—here's how it's made, here's what it will do:

**New cover is tougher, lighter**—Exterior wire winding can now be safely eliminated and hose weight reduced 30%. B. F. Goodrich engineers have developed a new rubber cover for Burstproof steam hose—100% more resistant to heat, hardening, cracking. Also resists weathering. Resists abrasion better than steel. Sparkproof, for use around petroleum. No other steam hose has this cover.

**Stands biggest temperatures**—Heat is

the enemy of steam hose. BFG engineers have developed a new rubber compound that resists rotting from heat, yet flexible enough to stand severe bending. A B. F. Goodrich antioxidant, Agerite, keeps tube live and elastic. Prevents bursting from pressure.

**Armored with steel wire**—Plies of fabric in ordinary steam hose burn from constant service, then rupture. In B. F. Goodrich Burstproof hose, multiple wire strands of high tensile steel (over 5 miles of wire per 50 feet) are braided at the angle to give greatest strength and flexibility. Openings in the wire braid permit tube to "rivet"

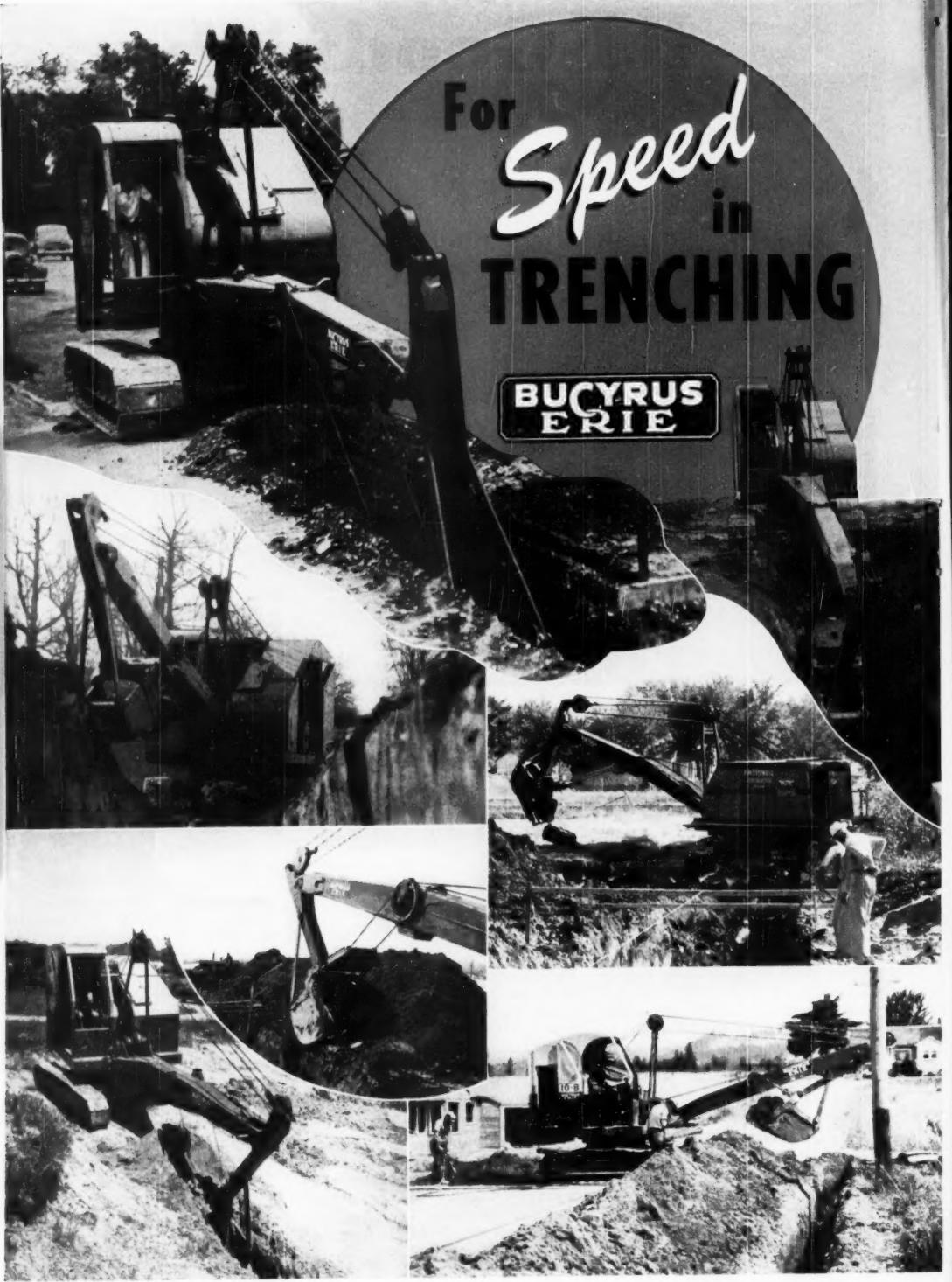
itself to other layers of rubber, increasing strength, making hose safe.

**Recommended service**—For saturated steam pressures up to 200 lbs. p.s.i. For superheated steam up to 388° F.

B. F. Goodrich Burstproof costs you no more than regular steam hose, yet you get these improvements that make it last longer, serve better, and insure workers of protection from scalding and injury. B. F. Goodrich Burstproof steam hose *can't burst from steam or steam pressure!*

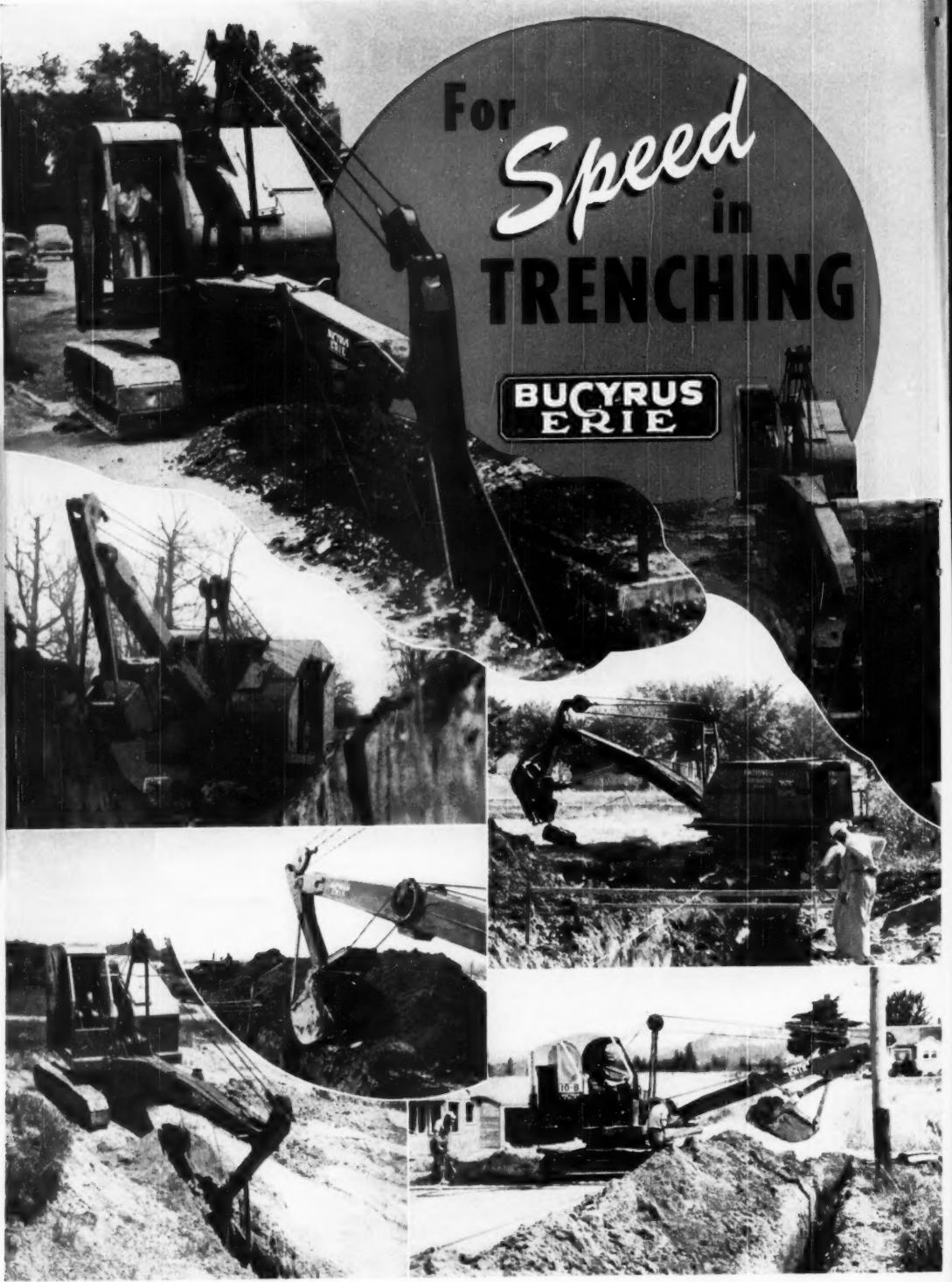
Call your local BFG distributor, or write: *The B. F. Goodrich Company, Industrial and General Products Division, Akron, Ohio.*

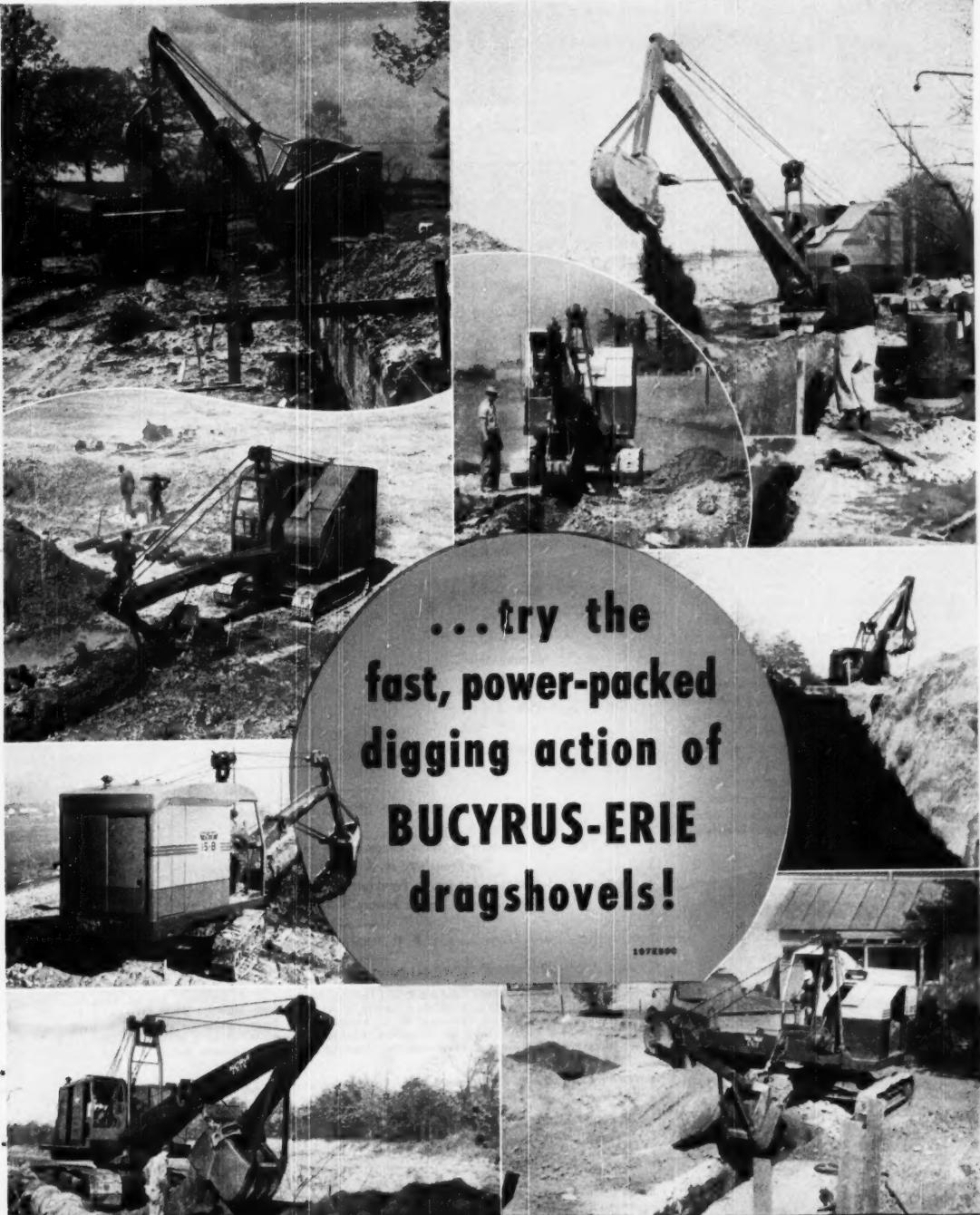
**B.F. Goodrich**  
RUBBER FOR INDUSTRY



For *Speed* in  
**TRENCHING**

**BUCYRUS  
ERIE**





...try the  
fast, power-packed  
digging action of  
**BUCYRUS-ERIE**  
dragshovels!

SEE YOUR BUCYRUS-ERIE DISTRIBUTOR  
for complete information on the  $\frac{1}{2}$  to  $2\frac{1}{2}$ -yd. line  
of shovels, draglines, cranes, clamshells, dragshovels

**BUCYRUS-ERIE CO.**  
South Milwaukee, Wis.

**Doing a Good Job  
AN EASY WAY!**

**SYMONS FORMS**

An easy method of form construction . . . cuts labor costs 50%. Only three essential pieces of hardware needed—bolt, wedge, form tie. Tie remains in the concrete while bolt and wedge may be used again and again. Bolt holds the form together and also holds the ties both ways. No nails or spreaders are needed. To strip forms take out wedges, remove bolts, then pull forms up or out without tools. Ties break back inside wall 1" from the surface by twisting loop 1/2 turn. Symons Forms are available made up ready for use or you may purchase the hardware for building your own forms.

Symons Forms, Safety Shores and Column Clamps can be rented with purchase option. Paid rentals apply on purchase price. Additional information will be sent upon request—use the coupon below.



**SYMONS CLAMP & MFG. CO.**  
4255 W. Diversey Ave., Chicago 39, Ill.

Please send me the items checked.

**Information regarding Symons Forms**

Catalog and Prices    Construction details  
 Samples    Layout and estimate (our plans under separate cover)

**Information regarding other Symons Products**

Column Clamps    Bar Ties and Tie Chairs  
 Safety Shores    Scaffolding

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Volume 32  
Number 5

**CONSTRUCTION  
METHODS AND EQUIPMENT**

ESTABLISHED  
1919

**MAY 1950**

**Pay Dirt in This Issue**

<b>Winter Dam Construction in Canada</b>	42
In cold weather, Ontario Hydro turns on the steam, and concreting continues.	
<b>Welded Reinforcing Saves Time</b>	48
Tack-welded mats assembled in templets halve placing time on Los Angeles job.	
<b>How to Set 46-Ton Expansion Rings</b>	50
Special hooks and heavy cables handle ten 22-ft joints for Davis Dam penstocks.	
<b>Big Water Intake Built in Flooded Cofferdam</b>	52
Neat pre-assembly and tremie setups make underwater construction a success.	
<b>Shovels Hang High in Pittsburgh</b>	58
They work down 240-ft side hill cuts in 12-ft stages on 1,250,000-yd road job.	

<b>Construction News in Pictures</b>	34	<b>Labor Notes</b>	70
<b>Editorial</b>	41	<b>Legal Decisions</b>	78
<b>Hopper Adds Chloride to Mix</b>	47	<b>Repairing Earthquake Damage</b>	86
<b>Campbell's Maintenance Corner</b>	66	<b>New Equipment</b>	96

**ON THE COVER**—On the Arterial Highway between Pasadena and Long Beach, Calif., J. E. Haddock Ltd., Pasadena contractor, pours concrete for a small bridge with a Northwest 25 crane. Concrete starts out in Jaeger truck mixers, ends up in a Blaw-Knox bucket.

**HAROLD W. RICHARDSON, Editor**

**Henry T. Perez, Managing Editor**   **Robert K. Tomlin, Consulting Editor**  
**New York:** J. M. Connolly • Nelle Fitzgerald • Melvin Dean   **Washington:** V. B. Smith  
**San Francisco:** N. A. Bowers • L. L. Wise  
**Foreign News Bureaus:** London • Frankfurt • Paris • Moscow • Tokyo • Melbourne  
 Rio de Janeiro • Mexico City

**R. F. BOGER, Publisher**

**SALES REPRESENTATIVES**

G. R. Ramei, Sales Manager; Howard Olsen, Business Manager; H. T. Buchanan, 330 W. 42nd St., New York; Fred G. Hudson, L. H. Hunt and H. L. Keeler, 520 N. Michigan Ave., Chicago; J. W. Otterson, 68 Post St., San Francisco; W. C. Bradford, 1510 Hanna Bldg., Cleveland; B. F. Horn, 2980 Penobscot Bldg., Detroit; W. E. Donnelly, Continental Bldg., St. Louis; C. F. McReynolds, 1111 Wilshire Blvd., Los Angeles; Ralph Maultsby, Rhodes-Haverty Bldg., Atlanta and J. H. Allen, First National Bank Bldg., Dallas 1, Texas.

**Other Sales Offices:** 17th and Sansom Sts., Philadelphia 3; 738-39 Oliver Bldg., Pittsburgh; 1427 Statler Bldg., Boston 16; Aldwych House, London.   **Member A.B.C.**

**Member A.B.C.**

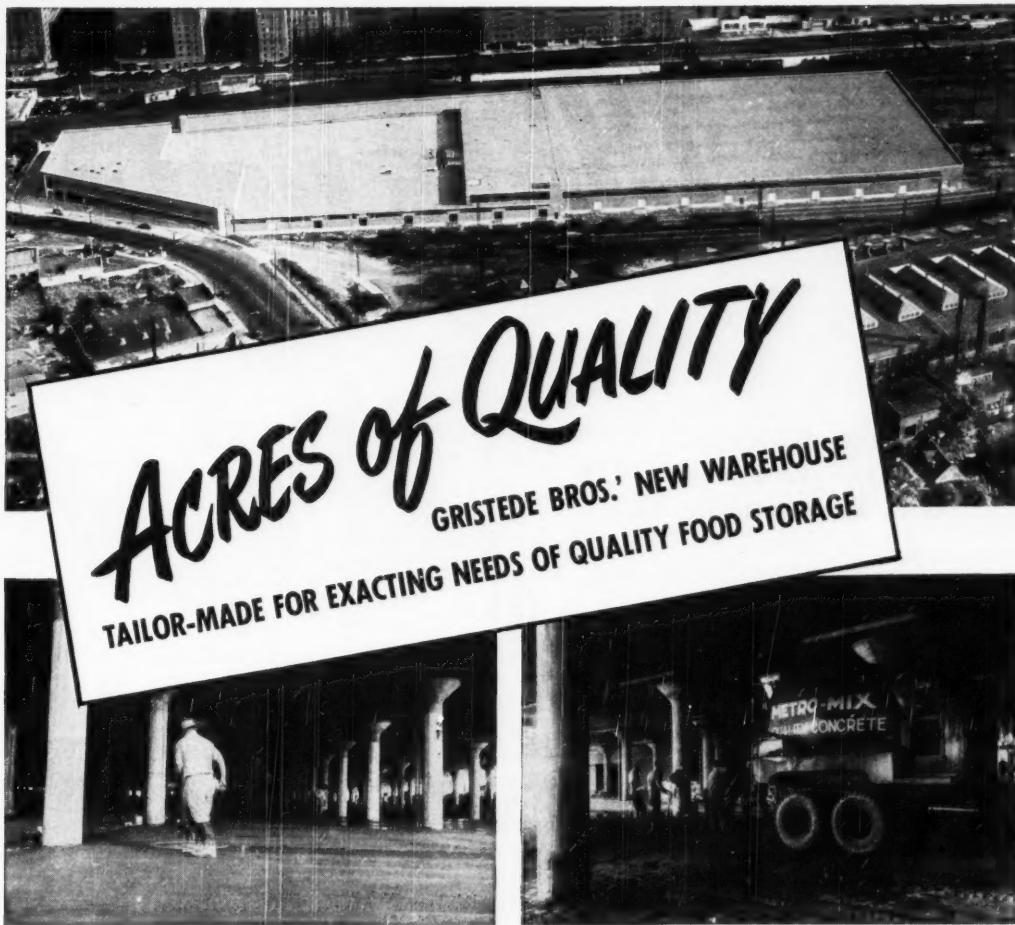
CONSTRUCTION Methods and Equipment, May 1950; Volume 32, Number 5. Published Monthly, price 35¢ a copy.

**Executive and Editorial Offices**—330 West 42nd St., New York 18, N. Y. Copyright 1950 by McGraw-Hill Publishing Co., Inc. All rights reserved. Published monthly by The McGraw-Hill Publishing Co., Inc., James H. McGraw (1860-1948); Founder: Curtis W. McGraw, President; Willard T. Chevalier, Executive Vice-President; Joseph A. Gerardi, Secretary-Treasurer; Paul Montgomery, Senior Vice-President, Publications Division; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation. Cable Address, "McGraw-Hill New York." Allow at

least ten days for change of address. All communications about subscriptions should be addressed to the Director of Circulation, 330 W. 42nd Street, New York 18, N. Y.

	1 year	2 years	3 years
U. S. and possessions	\$2	\$3	\$4
Canada	4	6	8
Pan America	6	10	12
All others	15	30	

Please indicate position and company connection on all subscription orders. Re-entered as second-class matter July 14, 1949, at the Post Office of New York, N. Y., U.S.A., under the act of March 3rd, 1879. Printed in U.S.A.



● Gristede Bros. Inc. have 140 stores in and around New York City. Each store carries 5,000 items, twice as many as average food stores. Assemble and distribute that many items, provide special storage conditions of temperature and moisture . . . load and unload . . . handle and convey . . . stack and unstack—and you need a lot more than just four walls and a roof! Gristede's new warehouse—355,000

sq. ft. floor area, all heavy-duty concrete construction—is tailor-made to meet these multiple problems. Specialized know-how in design and construction, including concreting throughout with Lone Star Cement, 26,000 bbls., invests this new warehouse with the same "Quality and Service" attributes which have distinguished Gristede operations for the past 59 years.

**GRISTEDE BROS. INC.**: Warehouse and Offices  
Bronxdale near Tremont Ave., Bronx, N.Y.C.

Architect: **OFFICE OF DAVID LEVY**, New York

Contractor:

**CARISTO CONSTRUCTION CORP.**, Brooklyn, N.Y.

Ready-Mix Lone Star Concrete:

**METROPOLITAN SAND & GRAVEL CORP.**, New York



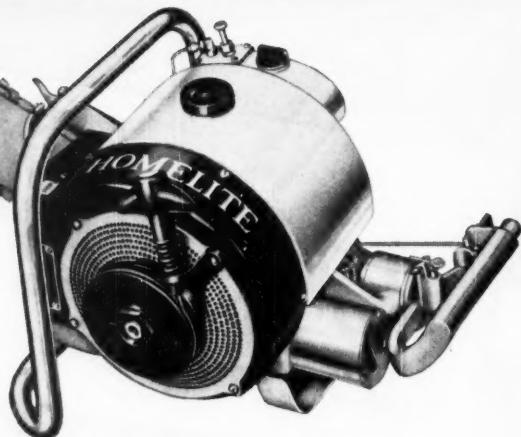
## LONE STAR CEMENT CORPORATION

Offices: ALBANY • BETHLEHEM, PA. • BIRMINGHAM • BOSTON • CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS • JACKSON, MISS. • KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK • PHILADELPHIA • ST. LOUIS • WASHINGTON, D.C. LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS, 27,500,000 BARRELS ANNUAL CAPACITY

# Every Homelite Product Is Always Better

# THREE WAYS

THE HOMELITE  
GASOLINE-ENGINE-DRIVEN  
ONE MAN CHAIN SAW

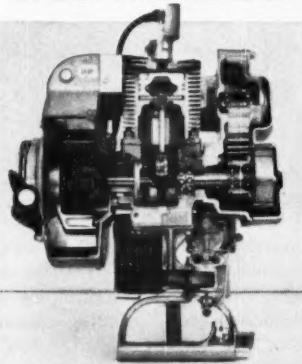


## 1. PERFORMANCE



Typical of all Homelite products, the Homelite Gasoline-Engine-Driven Chain Saw handles like a feather yet cuts faster and with less trouble . . . whether it's felling, bucking, notching or undercutting . . . than any other saw its size.

## 2. DEPENDABILITY



Typical, again, of all Homelite products, the Homelite One Man Chain Saw is powerfully driven by the time-proven famous Homelite gasoline engine . . . a simple, foolproof engine that is the exclusive result of Homelite's experience in building close to 300,000 gasoline-engine-driven units.

## 3. SERVICE



In addition to all the low maintenance features of Homelite Chain Saws . . . the permanent, chrome-plated chain, the liningless automatic clutch, the freedom from gears and oil seals, and the automatic lubrication . . . Homelite service shops the country over bring trained mechanics almost to your door, to keep your Homelite Chain Saw right up to Homelite nation-known performance standards.



# Homelite Corporation

1005 RIVERDALE AVENUE, PORT CHESTER, NEW YORK

MANUFACTURERS OF HOMELITE CARRYABLE PUMPS • GENERATORS • BLOWERS • CHAIN SAWS • PAVING BREAKERS

### STICK TO THE RULE OF THREE

1. Performance
2. Dependability
3. Service . . . and you'll always stick to a Homelite

# Euclid... Specialist

IN  
**OFF-THE-HIGHWAY  
HAULING  
EQUIPMENT**



Built by a pioneer manufacturer of earth moving equipment, Euclids incorporate the know-how of years of experience. Every Euclid model is engineered specifically for off-the-highway work; all of the production and service facilities of Euclid are devoted to this type of equipment.

Heavy-duty design and construction throughout assure long life and dependable performance... more loads per hour and more profit per load

on the toughest jobs. Some of the Euclid-built features are the planetary type drive axle, frame and body on all models, and double-acting hydraulic hoist for Rear-Dump and Side-Dump "Eucs".

Owners can depend on Euclid's world-wide distributor organization for parts and service when and where they are needed. Call or write your Euclid Distributor for complete information on models best suited for your job requirements.



The **EUCLID ROAD MACHINERY** Co., Cleveland 17, Ohio  
CABLE ADDRESS: YUKLID — CODE: BENTLEY



# **EUCLIDS**

*Move the Earth*



# MORE WORK AT



TUNE IN . . .  
TEXACO STAR THEATER  
starring  
MILTON BERLE  
on television  
every Tuesday night.  
See newspaper for  
time and station.



# TEXACO

# LOWER COST—

**Keep engines clean  
and efficient with  
TEXACO URSA OIL X\*\***

**A**SSURE trouble-free engine performance, and you'll get more work and longer working life from your machines. Maintenance costs and fuel consumption will be less, too. Use *Texaco Ursa Oil X\*\** — the fully detergent and dispersive oil that cleans as it lubricates. Ideal for both heavy-duty gasoline and Diesel engines.

*Texaco Ursa Oil X\*\** strongly resists oxidation. This means rings stay free, valves act properly because engines are cleaner. *Texaco Ursa Oil X\*\** stands up under heat and pressure . . . gives full protection at all times . . . guards bearings against corrosion . . . assures longer life for moving parts.

## Reduce Other Maintenance Costs

Use *Texaco Marfak* in chassis bearings—get extra hundreds of miles of protection, longer life for all chassis parts.

In wheel bearings, use *Texaco Marfak Heavy Duty*. It seals out dirt and moisture, requires no seasonal change.

Protect crawler track mechanisms with *Texaco Track Roll Lubricant*. It's remarkably long lasting, seals mechanisms against

water and dirt, reduces wear.

Texaco has a Simplified Lubrication Plan that's a real money saver. Ask your Texaco Lubrication Engineer for full details. Just call the nearest of the more than 2,000 Texaco Wholesale Distributing Plants in the 48 States, or write:

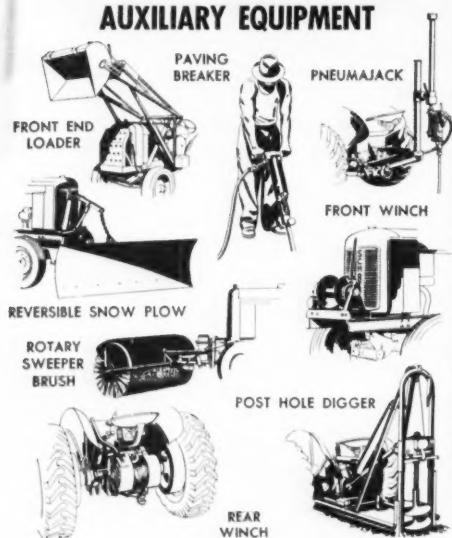
The Texas Company, 135 East 42nd Street, New York 17, N. Y.

## Lubricants and Fuels FOR ALL CONTRACTORS' EQUIPMENT



# The Pneumatractor

## SCHRAMM PNEUMATRACTOR AUXILIARY EQUIPMENT



## ...Presenting the Latest—Most Modern SELF-PROPELLED AIR COMPRESSOR

SCHRAMM'S newest unit: the *Pneumatractor*; an air compressor that is also a tractor.

Extremely versatile, it is NOT a power takeoff or power unit mounted on a tractor, but is powered with Standard Model 60' *Unistage* or the 105' *Pneumapower* Schramm Compressor. Available with a completely engineered and approved set of accessories, a few of which are illustrated at the left.

FOR FULL DETAILS, WRITE TODAY FOR BULLETIN NEU-50.

**SCHRAMM INC.**  
*The Compressor People*  
WEST CHESTER • PENNSYLVANIA

# THINK

*what this  
machine  
can do for You!*

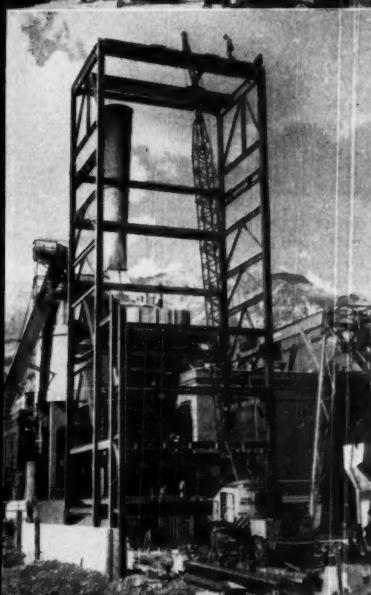
Here's a unit that can get around! It handles booms from 30 to 100 feet and a jib. The Northwest High-Speed, Power-Controlled Boom Hoist is independent of all other operations. The "Feather-Touch" Clutch Control, Uniform Pressure Swing Clutches, the Cushion Clutch and other Northwest advantages are standard equipment.

Coupled with these is the Carrier, the like of which has never been offered with a Truck Crane. Better frame reinforcing, better load distribution, outriggers that extend the full width of the carrier, easy conversion from Crane to Shovel, Dragline or Pullshovel without repositioning the base, are just a few of its many advantages. Here's a machine that you can move on the job fast and move around the job fast.

Let us tell you more about it. There is no other Crane and Carrier combination like this.

#### NORTHWEST ENGINEERING CO.

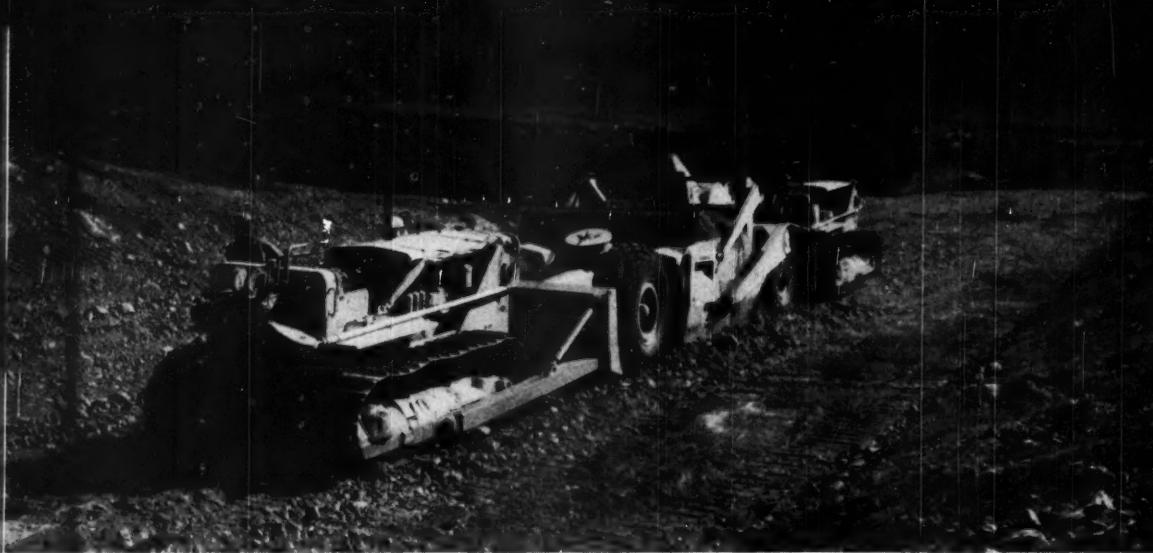
1503 Field Building,  
125 South LaSalle Street,  
Chicago 3, Illinois



# NORTHWEST



# PAY LOADS THAT PAY OFF



**Q**UICK, big, constant loads . . . they spell SPEED, VOLUME, PRODUCTION. And it's the tractor that plays the biggest part in the pay-off. You get the very tops in results when you sign up the *power, capacity, and dependability* that "Caterpillar" Diesel Tractors offer—the kind you see working on the state highway construction project pictured and described above.★

Says Contractor O. D. Cowart: "From my experience, 'Caterpillar' Diesel Tractors are unbeatable. Their ability to take punishment with a minimum of repairs makes them unquestionably the leader in the construction field."

That's putting it broadly. It's *sustained slugging power* that counts. Like the prize fighter who can stay on his feet round after round, it's the tractor which day after day can "take it and give it" that's the real profit-maker in the long run. "Caterpillar"

★ **New Mexico**, near Silver City. Two "Caterpillar" D8 Tractors push-and-pull-loading a "Caterpillar" No. 80 Scraper with  $11\frac{1}{2}$  yards of tough rock in a trifle over a minute—thanks to matched equipment and 130 honest drawbar horsepower. On 800-ft. one-way hauls the hauling team averaged 8 trips and 90 pay yards an hour. Total excavation (5.6 miles) 130,000 yards—about 60% rock. Two other "Caterpillar" Diesel Tractors, with Scrapers and Bulldozers, were also used on this work.

Diesel Tractors are made of that kind of stuff. They're tough! They don't need "long counts" (down time). They're quick on the comeback . . . should a new part or fix-up be in order, there's an efficient and quick-acting dealer service standing by. "Caterpillar" leaves nothing undone toward building—and keeping—60-second minutes, 60-minute hours, 24-hour days of *fighting performance* into every unit that bears its name. *Ask your "Caterpillar" dealer for the proof—in mechanical evidence, in user experiences, in demonstrations.*

**CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS**

**LOOK UNDER THE HIDE** for the qualities that pay off in tractor performance and long life... you'll find them in every "Caterpillar" detail. For example:



**Hard Chrome-Faced Compression Rings** are standard on all models of "Caterpillar" Diesel Tractor Engines—increasing life and performance at critical point of engine design.



**Air-Cooled "Lube" Oil.** Air cooling lowers oil temperatures—reducing carbon, minimizing gum formations, and adding to the efficient serviceable life of working parts.



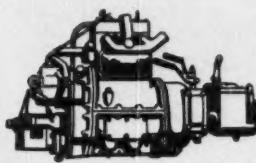
**Tapered Splines**—specially developed by "Caterpillar"—lock sprockets securely to shafts. So effective have they proved that the principle is similarly applied to other vital parts.



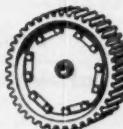
**Correct Track Alignment**, both vertically and laterally, is assured with this rigid roller frame. Heavy diagonal brace and widely spaced bearings add life to tracks and rollers.



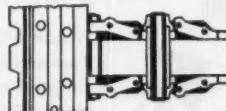
**Alloy Iron Wet Type Cylinder Liners** are "Hi-Electro" hardened—giving exceptionally long life. Wearing surface is chemically treated for proper break-in.



**Independent Starting Engine** of exclusive "Caterpillar" design gives safe-and-sure starts at all times, and allows the Diesel to build up full oil pressure before starting.



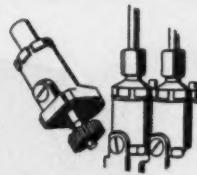
**"Hi-Electro" Hardened Final Drive Gears.** Teeth are three times harder after treatment and gear life is further boosted by the favorable compressive stress this process supplies.



**Counterbored Track Links**—to provide a tighter, better sealed joint and greater bearing surface between bushings and track pins. Extra assurance of long life in abrasive soils!



**Solid Aluminum Alloy Connecting Rod and Main Bearings** are exclusively "Caterpillar." Advantages: low rate of wear; fine heat-transfer characteristics; high corrosion resistance.



**"Caterpillar"-Built Fuel Injection System** is perfectly matched for "Cat" Engines. Pumps and valves require no adjustments, and are replaceable in the field—like spark plugs.



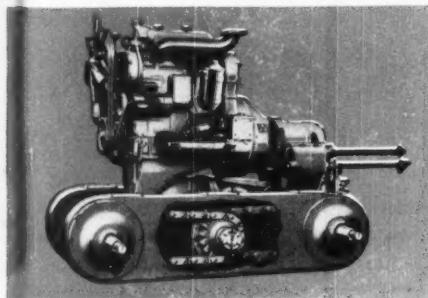
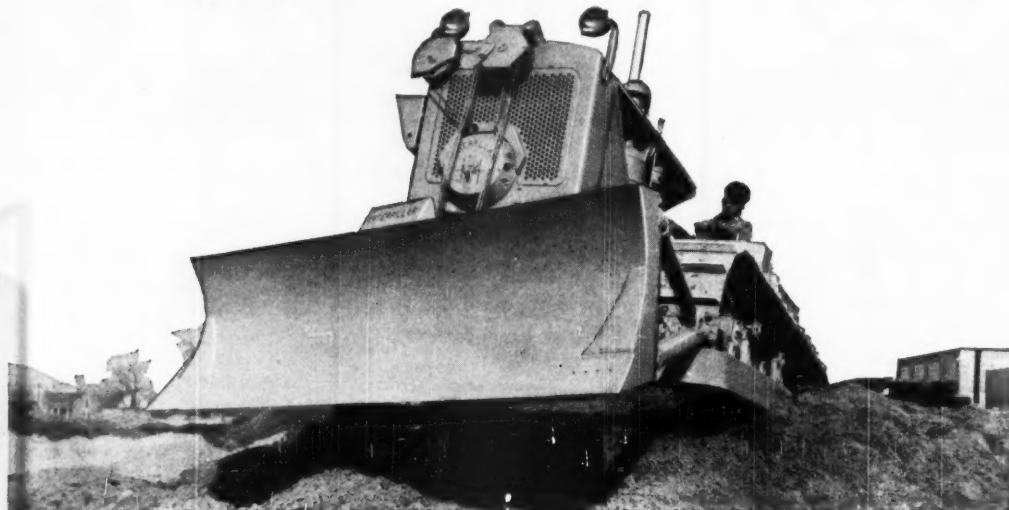
**Bellows Seals** are self-aligning, self-adjusting and self-lubricating—keep oil in, dirt and water out without need for take-up adjustment or periodic attention.



**Hour Meter** to give user the facts on tractor performance and life. Hour meters have always been standard on "Cat" Engines because "Caterpillar" has nothing to hide.

**CATERPILLAR**  
REG. U. S. PAT. OFF.  
**DIESEL**  
ENGINES • TRACTORS • MOTOR GRADERS  
EARTHMOVING EQUIPMENT

# Rough, Rugged, Heavy Duty Lubes for every equipment need!



**Look over this complete line of  
all-weather... all-purpose lubricants!**

**N**AME ANY LUBRICATION PROBLEM you can think of! There's the right grade and type of Cities Service lubricant to do a real job for you. This performance-tested line of quality products will help speed your heavy duty operations, cut maintenance costs, prevent equipment breakdowns. Get in touch with the nearest Cities Service office to learn how these high grade lubricants can help you.

- **Trojan All-Weather... All-Purpose Greases**
- **Pacemaker Oils**
- **Trojan Gear Oils**
- **Heavy Duty Motor Oils**

**FREE** — A helpful new booklet—Earth Moving and Construction Machinery lubrication. Above cutaway view is typical of illustrations found in this new 50 page book dealing with proper lubrication in the construction industry. Write today for your copy.

CITIES SERVICE OIL COMPANY  
Sixty Wall Tower, Room 574  
New York 5, N. Y.

Please send me without obligation your new booklet entitled "Earth Moving and Construction Machinery Lubrication."

Name

Company

Address

City  State



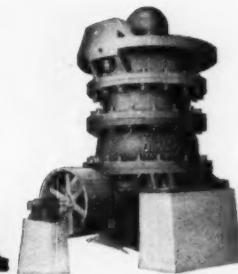


SAVE TIME AND TROUBLE  
**...Have Traylor Build  
 ALL Your Crushers**

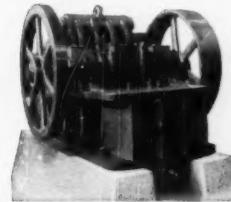
Your completed plant will be more **efficient** . . . more **economical** to operate. The same basic principles of design will be employed by each "Traylor-made" machine to insure **balanced** production, trouble-free operation. For example, the curved crushing surfaces used in both Traylor Gyratory and Jaw crushers will eliminate choking and packing . . . reduce waste fines, slabs and discs to a minimum through each stage of **primary** and **secondary** reduction. The result will be a **steady** supply of **uniform**, **cubical** aggregate that will meet the most exacting specifications.

**Traylor Engineers Can Help You**

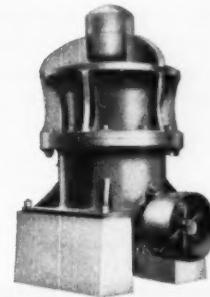
Because Traylor builds a complete line of stone crushing machinery . . . our sales-engineers are able to make an unbiased recommendation, influenced **only** by our **half century of experience**. If your aggregate plant is in the early planning stage, **now's** the best time to get a Traylor engineer on the job. He can save you time and money by tying up the "loose-ends" that so often result in delay and disappointment when working with **more** than **one** supplier. Write to us today.



- Traylor Gyratory Crushers are highly recommended by their economical operation for use wherever daily capacities of 8,000 tons or more are desired. Available in 7 sizes with feed opening ranging from 20" to 60".



- Traylor Jaw Crushers are equipped with Traylor's famous non-chokable, smooth-faced, **curved** jaw plates for greater capacities at smaller settings and longer plate life. Available in a wide range of sizes and capacities to meet every requirement.



- Traylor Reduction Crushers are compactly designed . . . require a minimum of floor space and head room. Cast steel frame. Non-chokable, bell-head and **curved** concaves. Made in 6 sizes, maximum feed opening 22".

**TRAYLOR ENGINEERING & MANUFACTURING CO.**  
 149 Mill St., Allentown, Pa.

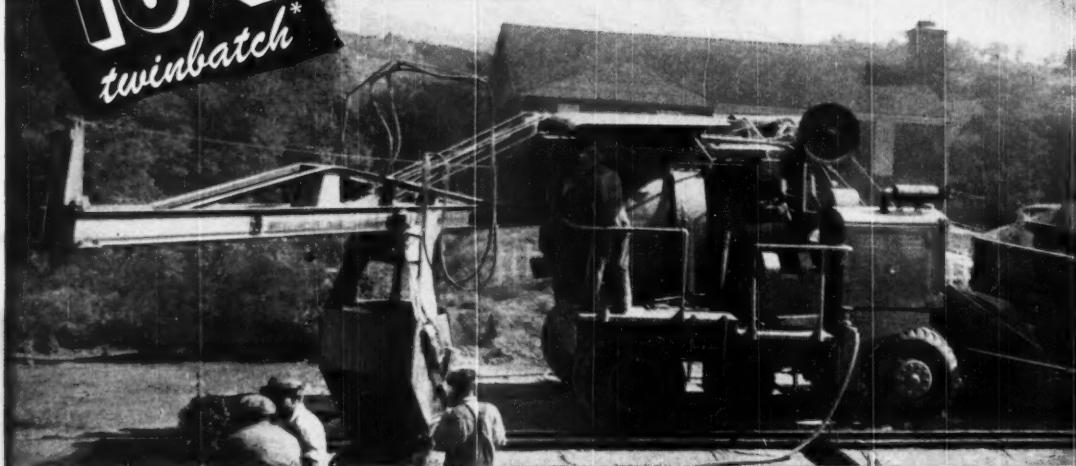
Sales Offices: New York, N.Y., Chicago, Ill., Los Angeles, Calif.  
 Canadian Mfrs: Canadian Vickers, Ltd., Montreal, P.Q.

**Traylor**  
 Jaw, Reduction and Gyratory Crushers  
 Rod Mills - Crushing Rolls  
 Apron and Grizzly Feeders

A "TRAYLOR" LEADS TO GREATER PROFITS

KOEHRING  
**16-E**  
*twinbatch\**

MOBILE • VERSATILE

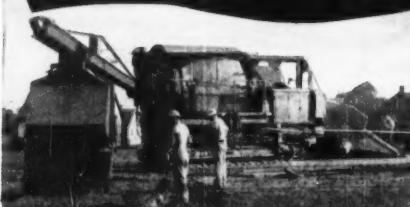


**K**OEHRING 16-E *twinbatch* provides many special operating advantages for intermediate paving and all types of concrete construction work: 60° elevating boom raises controlled-discharge bucket to a dumping height of 21 feet . . . gives complete flexibility of application for elevated pouring. 16-E *twinbatch* mixes and distributes up to 50 cu. yds. per hour, exceeding the capacity of the larger 27-E single-drum paver. Big, 92-inch wide skip raises in only 7 seconds . . . split-second Autocycle mixing is controlled by Koehring Batchmeter, saves time on every

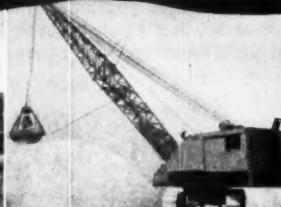
phase of the operating cycle. As a result, the 16-E can hit a top output of 86.7 batches an hour, on 60-second mixing cycle specification. Vertical, syphon-type water tank assures consistent, maximum strength concrete . . . guarantees accuracy to meet all specifications.

In addition, the 16-E *twinbatch* rides on 6 big 11:00 x 20 pneumatic tires . . . works, travels over pavement without surface damage. Drives job to job at speeds to 6 m.p.h. . . . cuts non-productive moving time, increases work time.

SAVE TIME, MONEY with COMPLETE KOEHRING HEAVY-DUTY LINE



**34-E tandem PAVER . . .**  
for big production on highways, airports and other intensive paving contracts. Ask, too, about Koehring Longitudinal Finisher for "finely" precision finishing.



**CLAMSHELL CRANES . . .**  
draglines, shovels and hoses . . . available in 4 heavy-duty sizes:  $\frac{1}{2}$ -yd., 16-yd., 176-yd., and the big  $2\frac{1}{2}$ -yd.



**HIGH-SPEED DUMPTON® . . .**  
with 6-yd. rock body, has 3 speeds forward and reverse for no-time shuttle haul . . . 1-second gravity dump.  
\*TRADEMARK REG. U. S. PAT. OFF. REG.

# controlled

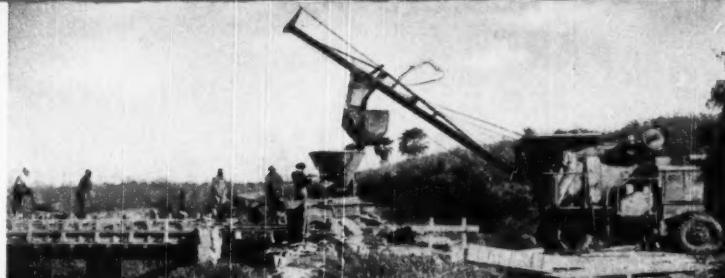
# ELEVATED DISCHARGE

## FOR STREETS AND HIGHWAY WIDENING

Rubber-tired mobility of 16-E *twinbatch* permits working over streets and new pavement strips without planking. Saves time on the job, and job-to-job. Has overall width of only 8 feet, plus speeds to 6 m.p.h., for fast, self-powered moves.

## BRIDGES . . . ▶

You're not grounded with the 16-E . . . reaches up and out to discharge mixed concrete into forms, hoppers, chutes. Double-channel structural boom is 25 feet long . . . swings in a 160° arc . . . elevates 60° . . . holds firmly in any position . . . discharges controlled bucket at any height up to 21 feet.



## CULVERTS . . . ▶

For pouring culverts, and in other similar restricted areas, controlled door on bucket allows gradual discharge, prevents spillage. Clamshell-type bucket door can be opened or closed at any time, operates by hydraulic control. All operating mechanism is outside bucket, prevents clogging. Adjustable strap hangers and perfect oscillation assure vertical dumping position of bucket.



## FOUNDATIONS . . . ▶

On footings, pilings, retaining walls, etc., the 16-E *twinbatch* spots its load fast. Big bucket travels 92 feet per minute on elevated boom, 183 feet per minute on horizontal boom. 24 cu. ft. water level capacity of clamshell type bucket is more than ample for full 16 cu. ft. batch . . . plus 10% overload.



## BATCHING CONCRETE ▶

The high-production 16-E also can be set up as a central mix plant. Elevated pouring makes it handy for loading trucks, and for handling a variety of miscellaneous batching applications.

**It will pay you to check all the other many advantages of this rubber-tired 16-E *twinbatch*.** Write for new catalog . . . or call your local Koehring distributor for complete facts.



**KOEHRING**  
COMPANY  
MILWAUKEE 10, WIS.  
Subsidiaries: KWIK-MIX • PARSONS & JOHNSON



Mail to: KOEHRING COMPANY, Dept. CM, Milwaukee 10, Wisconsin  
Please send us new 8-page catalog on the rubber-tired 16-E *Twinbatch*.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_

TITLE \_\_\_\_\_

STATE \_\_\_\_\_

# COMPARE

before you buy

## COMPARE the BONUS PRODUCTION offered by

# UNIVERSAL'S EXCLUSIVE

# TWINDUAL METHOD

Get all these advantages with the  
TWINDUAL Method in Rock and Gravel Plants

Three Full Stages of Reduction . . .

First stage—Jaw Crusher

Second and Third stages—TwinDual Rolls

2 TwinDual Rolls are in effect two roll crushers, yet save weight and space required by two separate units.

3 Wide feed opening of Second Stage (see illustration) permits up to 100% wider jaw crusher discharge opening.\* This provides better angle of nip, doubles jaw capacity, greatly reduces jaw wear and results in faster discharge of material from jaw crusher—no clogging.

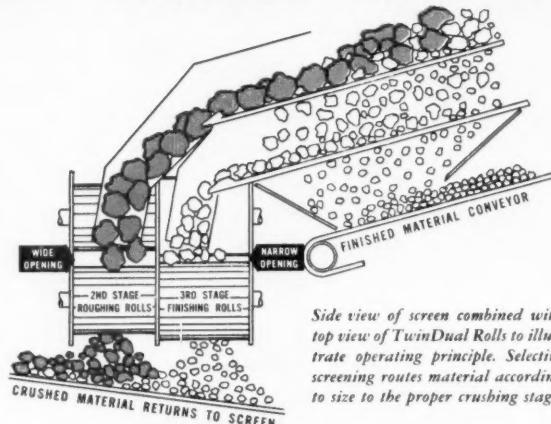
4 30% to 50% of material entering Second Stage is reduced to finished size and does not require reduction by the Third Stage.

5 Finished material removed before and after each of the three crushing stages increases production. Selective screening routes oversize to the proper crusher.

6 No material enters any crusher unless crushing by that stage is required. Capacity is increased because crushers are not burdened with unnecessary material—roll shells and jaws last longer.



**TWINDUAL ROLL CRUSHER**  
Two sets of double rolls in a single machine



Side view of screen combined with top view of TwinDual Rolls to illustrate operating principle. Selective screening routes material according to size to the proper crushing stage.

### PORTABLE and STATIONARY TWINDUAL Plants Available for Rock and Gravel

Tried and proved by more than 10 years of successful operation in the field. TwinDual owners report high production with low operating and maintenance costs. Feature for feature, capacity for capacity, weight for weight, compare Universal TwinDual Plants with the field. Get all the facts now.

Write for complete information

Universal builds a variety of "Right Combinations" of crushing, screening, washing and conveying equipment for rock, gravel and aggregate.

**UNIVERSAL ENGINEERING CORP., Division of PITTIBONE MULLIKEN CORP.**

327 8th St., N. W., Cedar Rapids, Iowa

Phone 7105

4700 W. Division St., Chicago 51, Ill.

Phone SP 9-5100



**BIG JOBS, TOUGH JOBS, ON THE ROAD OR OFF—**  
**GENERAL works faster, safer, cheaper,**  
**Lasts Longer**

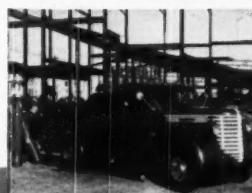


• The General L. C. M., for most work off-the-road, has a massive, lugged tread that develops extra traction forward or backward. Exceptionally difficult to cut, chip or bruise even under difficult working conditions.

• The General H. C. T., for most work on-the-road, rolls easily, quietly; gives more safety, more quick-stopping power—rain or shine. Unusually thick, deep tread gives amazingly long mileage.

**THE  
GENERAL  
TRUCK TIRE**

**SPECIFY GENERAL TIRES ON YOUR NEW EQUIPMENT**

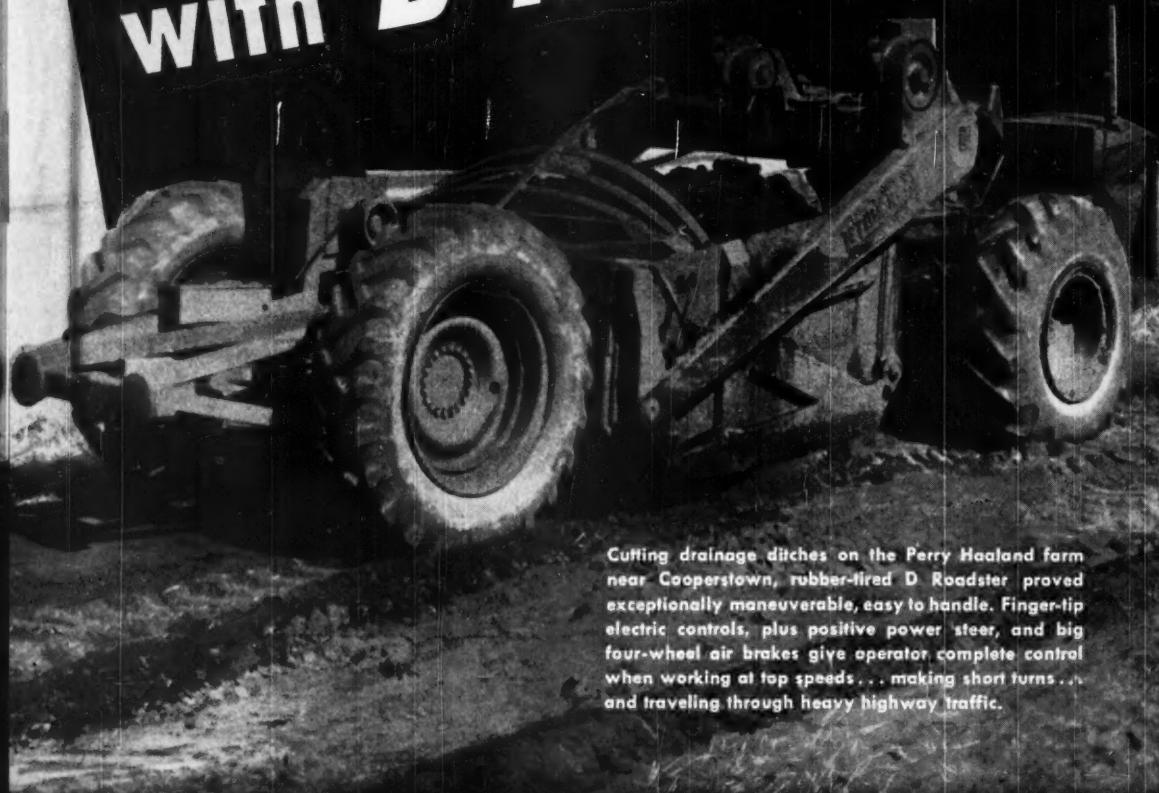


For lighter trucks—the General All-Grip's thick tread blocks give extra traction on or off-the-highway. Rolls quietly, smoothly; stops quicker... rain or shine. Ideal tire for pick-up trucks under heavy loads.



The General Tractor Grader Tire combines maximum drive-wheel traction with two-way, self-cleaning tread design for extra traction, forward or backward. The General Ribbed Grader tire steers easily; prevents side-slip.

# Griggs County Speeds Conservation Work with "D" ROADSTER



Cutting drainage ditches on the Perry Haaland farm near Cooperstown, rubber-tired D Roadster proved exceptionally maneuverable, easy to handle. Finger-tip electric controls, plus positive power steer, and big four-wheel air brakes give operator complete control when working at top speeds . . . making short turns . . . and traveling through heavy highway traffic.



**See your LeTourneau Distributor  
NOW for complete information**



One-man-operated Tournapull averages 35 loads an hour on Haaland job in North Dakota.



Dirt from ditches is hauled an average of 175 feet...then wasted in low spots in fields.

## Mobile, Self-loading Roadster Builds Dams, Ditches, Reservoirs, Roads

Griggs County Soil Conservation District, Cooperstown, North Dakota, has dozens of small-yardage digging and filling assignments spotted 1 to 25 miles apart. These are 2-3 hour jobs. Previously it used to take longer to move equipment in and out than it did to move the dirt. Now, they have a fast, one-man, rubber-tired D Roadster operating on a "work-and-run" schedule . . . traveling job-to-job at road speeds up to 25 m.p.h. . . . and, as one county official puts it, "almost doubling the scope of the Soil Conservation program."

### Digs 250-yd. drainage ditch in 2 hours

Most of the work involves digging drainage ditches — shallow trenches about 3' deep with a flat 8' bottom and 5:1 side slopes. On excavation of one of these ditches at the A. T. Huso farm near Aneta recently, the Griggs County "D" self-loaded 250 yards of silty loam, wasted it on low spots 150' away and finished the 400' excavation in exactly 2 hours.

On another ditching job — this one at the Perry Haaland farm south of Cooperstown — the D Roadster picked up 4½ pay yards of black loam in 42 seconds . . . hauled 175' one way to fill . . . completed a cycle every 1.7 minutes. District production records on the Haaland job show that the "D"

averaged 35 loads — 90 bank yards an hour — including finishing time.

### Hauls 62.7 yds. an hour on road job

In addition, the versatile Roadster has built 2 small earthfill dams, 10 trench silos, 1 water reservoir, and, during the rainy season, has helped out on county and township highway maintenance. On a one-day road repair job in Romness Township, the Roadster self-loaded dry, hard clay from hillside borrow . . . hauled from 3100 to 3350 feet over existing road to fill . . . and, in 10 hours, moved 128 loads — 627 yards.

"We can now do a more complete job of soil conservation," say officials working with the D Roadster. "The production of the machine is not only outstanding while on the job, but the ease and speed of moving from job-to-job means small assignments of two or three hours are now economically sound."

You'll find this 25 m.p.h. D Roadster a time and money-saver on all your dirtmoving jobs . . . either as an efficient one-man self-loader or with a pusher in fleet operation. Equipped with a dozer, it handles a variety of light dozing jobs. Get all the facts on performance . . . price . . . and delivery. Call your LeTourneau Distributor TODAY.

Self-propelled D Roadster gets capacity loads, completes 350-foot cycle in 1.7 minutes.

**LETOURNEAU**  
PEORIA, ILLINOIS



**TOURNAPULLS**

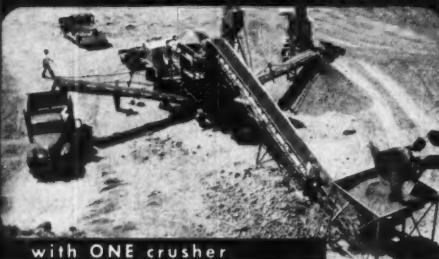
**MORE WORK PER HOUR WITH RUBBER-TIRED POWER**

LeTourneau Trademark Reg. U.S. Pat. Off. 8183

# You Name It! We HAVE IT!

Portable (and stationary) rock and gravel crushing, screening and washing plants for every requirement. High speed jaw and roll crushers, with matching conveyors and screens, combined as you want them in a plant that will give you "More Rock for Less Money."

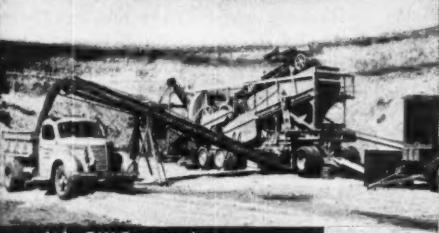
## Single-Unit Plants



with ONE crusher



with TWO crushers



with TWO crushers

## Multiple-Unit Plants



TWO units...TWO crushers



TWO units...THREE crushers



THREE units...FIVE crushers

Yes, whatever your particular production problem, you will find the answer in an Austin-Western plant. Our engineering department will gladly submit sketches and estimates.

**AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U. S. A.**

BUILDERS OF ROAD MACHINERY  
**Austin**  **Western**

Developed by three years of research . . . and now refined by  
tens of millions of dollars' worth of new equipment!

# Gulf's No-Nox

**GREAT  
NEW**

**DESIGNED FOR TODAY'S POWERFUL NEW ENGINES!**

Today's new cars have the most powerful engines ever made. AND—

*They require a super, anti-knock gasoline*

Such a gasoline is the new No-Nox. It was especially designed by Gulf scientists—working hand-in-hand with leading automotive engineers—to give you *maximum* performance in your new car.

With a gasoline like this great new No-Nox, you can be *sure* your new car will perform at its brilliant best.

And the new No-Nox not only gives new cars peak performance. It also gives new life, new pep, and stops knocks in older cars too—even many with heavily carboned engines!

So no matter what model you drive, get a tankful of the new No-Nox today.

See for yourself what a difference it makes!

*Whisper-Quiet, Knock-Free Power!*

*Easy, Fast-Firing Starts!*

*Quick, Safe Passing!*

*Unexcelled Mileage!*

**Terrific Power in Every Drop!**



Good Gulf—our famous "regular" gasoline  
—is now better than ever, too!

Gulf Oil Corporation • Gulf Refining Company

# PAYLOADERS



## FIVE PROVEN MODELS

12 cu. ft. •  $\frac{1}{2}$  yd. •  $\frac{3}{4}$  yd. •  $1\frac{1}{4}$  yd. •  $1\frac{1}{2}$  yd.



# ON Rubber Soil • SPEED TRACTOR MOBILITY to any job!

## ONLY PAYLOADERS Give You ALL These Features

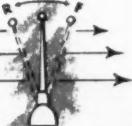
### COMPLETE UNITS—NOT TRACTOR ATTACHMENTS

Payloaders are complete Hough-built tractors—with shovels designed expressly to provide faster, more efficient and more versatile tractor-shovel performance. They dig, load trucks, grade, level, spread and backfill . . . also handle bulk materials, push, pull and lift.

### SEVERAL SPEEDS—BOTH WAYS

#### QUICK FORWARD-REVERSE SHIFT

Transmissions are fully reversing . . . have several speeds in reverse as well as forward . . . PLUS a separate, quick-acting, forward-reverse selector. They outperform all regular tractors having only one slow reverse speed.



#### CONTROLLED POWER DUMPING AND BUCKET CLOSING

Fingertip controlled hydraulic power dumps bucket as abruptly or slowly as desired, also closes the bucket. Saves wear and tear on truck bodies and springs . . . speeds loading cycles.

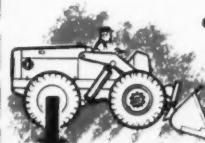
#### DOUBLE CUTTING ACTION AND LEVEL CARRYING OF FULL LOADS

Bucket digging action is a powerful forward-upward cutting action that gets full loads independent of tractor forward motion. Bucket then tips back quickly so that heaped loads can be carried low without spilling.



#### OPERATOR COMFORT—VISIBILITY

Operator is comfortably seated high and forward where he can see what he's doing and where he's going at all times. No superstructures to obstruct his vision.



#### COMPACT, STABLE, MANEUVERABLE

Rear engine location counter-balances the load . . . increases machine stability and capacity. Short wheelbase, low center of gravity and hydraulic brakes add to maneuverability, safety and ease of control.

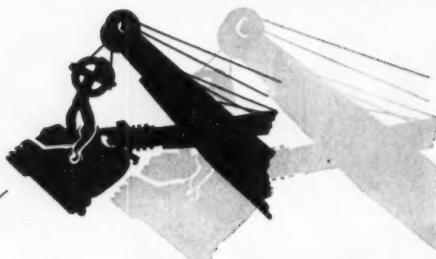


## HOUGH PAYLOADER

Manufactured by THE FRANK G. HOUGH CO.



Write: THE FRANK G. HOUGH CO. 706 Sunnyside Avenue, Libertyville, Illinois



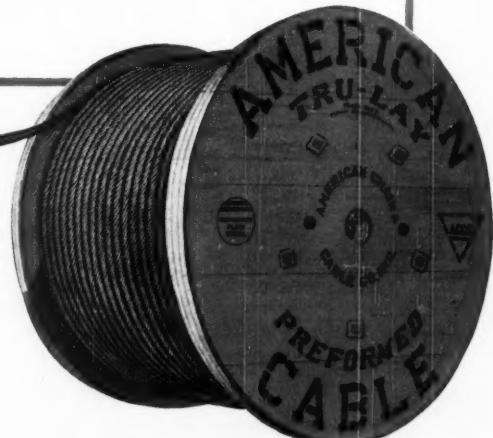
## TRU-LAY...

*The Wire Rope Name that means most value...*

...in length of service... in ease of handling... in adaptability to all working conditions... in lower operating costs... in all the ways that prove to a user that his wire rope dollar goes further when he buys TRU-LAY.

TRU-LAY Wire Rope is preformed—and made by the men who originated preforming. Men with skills grown out of patient, conscientious, life-long devotion to wire rope. Men whose satisfaction lies in trying to improve what is already the best.

These are the extra advantages you get when you specify **TRU-LAY—THE WIRE ROPE NAME THAT MEANS MOST VALUE.**



**ACCO**

*In Business for Your Safety*

**AMERICAN CHAIN & CABLE  
AMERICAN CABLE DIVISION**



Wilkes-Barre, Pa., Atlanta, Chicago, Denver, Houston, Los Angeles, New York,  
Philadelphia, Pittsburgh, Portland, San Francisco, Seattle, Tacoma, Bridgeport, Conn.



## Fit Thermoid Quality and Experience into Your Belting Picture

Thermoid high quality stems from continuing research and product development. To complete this picture, your Thermoid distributor and the Thermoid field representative, working as a team, offer you practical experience in solving your particular problem.

Whether it's run-of-the-mill or something "special", your Thermoid distributor can help you select the right Thermoid Conveyor Belt. And the down-to-earth advice of Thermoid field representatives is welcomed by men faced with belting trouble in mining, quarrying and construction operations. They know this advice is the result of day-by-day experience with conditions *in the field*.

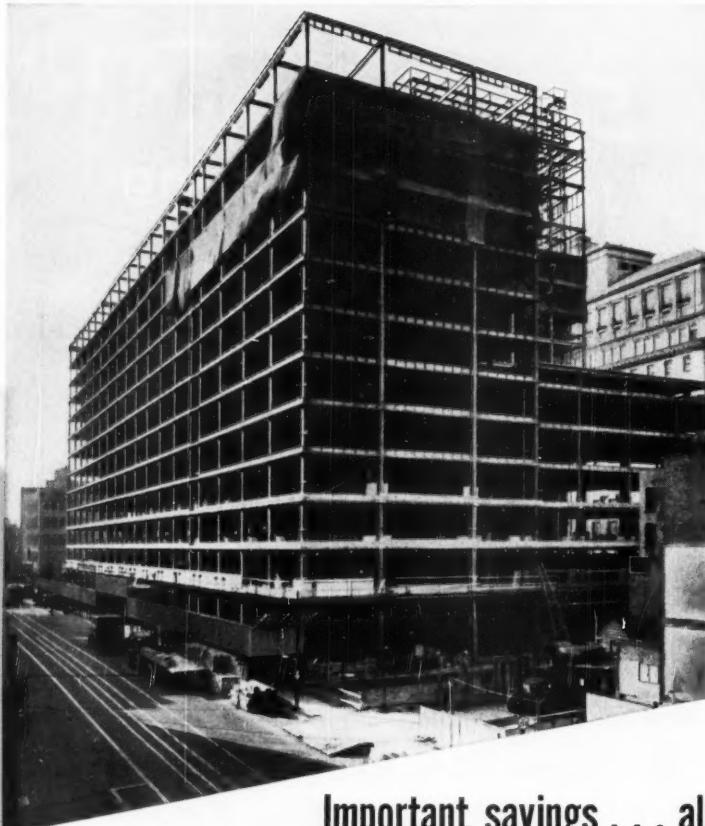
If your belting fails prematurely—if you're stumped with a tough belting problem—call your Thermoid distributor. Together with the Thermoid field representative, he can help you get greater economy, efficiency and tonnage for your belting dollar.

**It Will Pay You to  
Specify Thermoid**

Thermoid Quality Products: Transmission Belting • F.H.P. and Multiple V-Belts • Conveyor Belting • Elevator Belting • Wrapped and Molded Hose • Molded Products • Industrial Brake Linings and Friction Materials.

**Thermoid  
Company**

**Main Offices and Factory • Trenton, N. J., U. S. A.  
Western Offices and Factory • Nephi, Utah, U. S. A.  
Industrial Rubber Products • Friction Materials • Oil Field Products**



Central Office Building, Board of  
Transportation of the City of New York,  
370-380 Jay Street, Brooklyn, N. Y.  
**Contractor:** Grove, Shepherd, Wilson &  
Kruege, Inc., New York City.  
**Ready Mixed Concrete:** Cranford Materi-  
als Corporation, Brooklyn, N. Y.



## Important savings . . . all along the line . . . with LEHIGH EARLY STRENGTH CEMENT

Careful planning and the right material paid off in the erection of the Central Office Building for New York City's Board of Transportation.

To cut the extra costs of winter concrete construction, Grove, Shepherd, Wilson & Kruege stepped up their schedule for the floors with Lehigh Early Strength Cement . . . reduced the construction period by more than one half . . . *with these important savings:*

- 3 months of unproductive overhead
- 75% of estimated cost of winter weather protection
- \$12,500 in form costs

On practically every type of construction you can save *all along the line* by the timely use of Lehigh Early Strength Cement.

Whatever your cement requirements, there are Lehigh Cements to fit them. Our Service Department will be glad to help you with any specific problem.

**LEHIGH PORTLAND CEMENT COMPANY** • ALLEN TOWN, PA. • CHICAGO, ILL. • SPOKANE, WASH.

**LEHIGH PORTLAND CEMENT • LEHIGH EARLY STRENGTH CEMENT**  
**LEHIGH AIR-ENTRAINING CEMENT • LEHIGH MORTAR CEMENT**

# JAEGER paver-type AGGREGATE SPREADER

the low-cost, accurate, self-propelled spreader you've been looking for



**ALL TRACTION ON SUBGRADE** or compacted course. No displacing of loose material. 4-wheel drive.



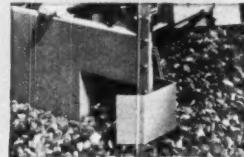
**STRAIGHTEDGE RUNNERS** carry screed independent of rest of machine, average out subgrade irregularities, insure accurate lay.



**LAYS MANY MATERIALS:** The Jaeger is adaptable for free-flowing bituminous mixes as well as all aggregates up to 4" stone.



**UP TO 25' IN TANDEM:** Use 2 low-cost spreaders to lay and roll full-width base. Keep your costlier paver busy on top course.



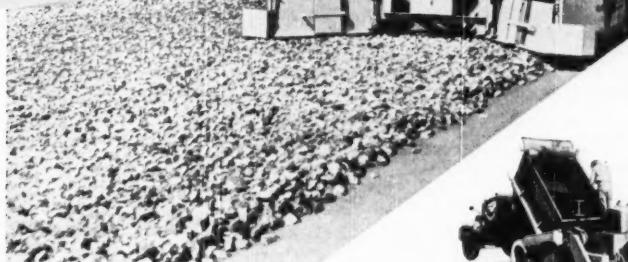
**BLEND'S PERFECT JOINTS:** Side control gates furnish material for blender wings to form joints. Saves hand work.



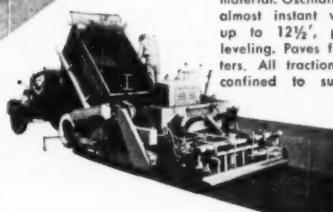
**QUICK WIDTH CHANGES, 10' to 12½'** by simply cranking telescopic shaft, adding screed inserts. Block off for 8' to 10' widths.

**ALL AGGREGATES**, both base and surface, plant-mixed stabilized soil and free-flowing bituminous mixtures — up to 10" thickness, 8' to 12½' widths. Lays big daily tonnage, to correct course thickness — yet is low in cost.

Contractors, highway engineers, send for new Bulletin SPS-9.



**JAEGER BITUMINOUS PAVER "Teams"** with the Jaeger Aggregate Spreader: America's most advanced precision paver for all types of bituminous material. Oscillating tiltable screeds, almost instant width adjustability up to 12½', positive automatic leveling. Paves flush to curbs, gutters. All traction and heavy load confined to subgrade. Ask for Catalog BP-9.



**CONCRETE PAVING CONTRACTORS:** Get labor-saving mass-production with Jaeger Diagonal-Screed Finisher and Screw Spreader "Team". Ask for catalog.

THE JAEGER MACHINE CO., Columbus 16, Ohio  
Distributors in 130 Cities of the U.S. and Canada

**JAEGER**  
engineered equipment  
PUMPS • AIR COMPRESSORS • MIXERS

# TOUGH MOUNTAIN HAULS

...a daily dish

**H**AULING  $10\frac{1}{2}$  bank yard loads of granite over mountain trails at altitudes up to 8300 feet is a real test of a Diesel engine's brute strength and stamina.

To see how General Motors Diesels take such work in stride, look at the record three LeTourneau Tournarockers, powered with GM Diesels, made for contractors Horner and Switzer on relocation of United States Highway 280 at Granby Dam, Colorado.

Checked on a haul of 1240 feet each way, including a 170-foot stretch of 13% adverse grade, each Tournarocker took only  $4\frac{1}{4}$  minutes to travel, dump and return to shovel. Haul road conditions were poor due to heavy rainfall. Yet haul cycles were so fast that on most distances only two of the Tournarockers were needed to keep the  $2\frac{1}{2}$ -yard rock shovel busy. Together, these three 16-ton units moved 220,000 yards of granite.

Here is self-evident recommendation of GM Diesel's powerful 2-cycle operation — power at every piston downstroke. It makes them compact, easy to start, quick on the pickup, clean burning and efficient at any altitude.

If you're interested in dependable power with rugged performance and low fuel costs, you'll want all the details about GM Diesels. See your distributor or drop us a line.



## DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES . . . Up to 275 H.P.    DETROIT 28, MICHIGAN    MULTIPLE UNITS . . . Up to 800 H.P.

GENERAL MOTORS

DIESEL BRAWN WITHOUT THE BULK



## LOWERS Masonry Cutting COSTS

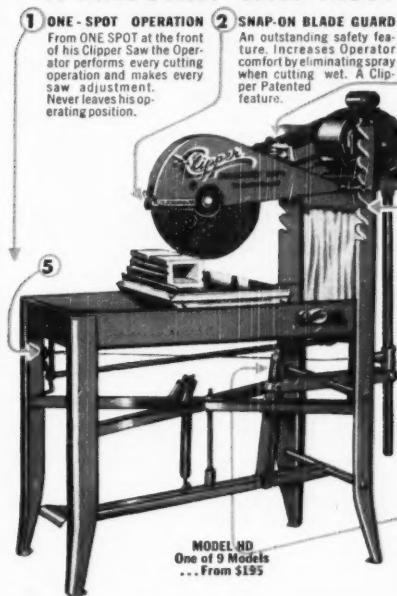
27%  
on Housing Project

HUGH D. REICH, Contractor, Reports:

"Cost records show that our Clipper Masonry Saws saved us 27% in material and labor. Model HD Clippers go wherever the masons go—up on the wall, scaffold, or building roof... or down to the foundation. When bad weather runs us inside, the dustless Clippers go right along inside. You can understand why the masons would no more be without a Clipper than a mason's trowel."



## For Such a Saving— A MASONRY SAW MUST HAVE—



**FREE TRIAL** Masonry Cutting on FREE TRIAL... the only positive guarantee of complete satisfaction. Try a Clipper on your job—any one of NINE MODELS.

### THE ORIGINAL MASONRY SAW

**Clipper**

NATION-WIDE  
DIRECT  
FACTORY SERVICE

**MANUFACTURING CO.**  
KANSAS CITY 8, MISSOURI

Cable Address: CLIPPER K. C. Mo.

PHILADELPHIA • ST. LOUIS • CLEVELAND • AUSTIN, TEX.  
SAN FRANCISCO • CHICAGO • NEW YORK • PITTSBURGH

**Clipper Masonry Saws**

DRY ABRASIVE      DIAMOND BLADE      WET ABRASIVE

CUT WET or CUT DRY  
There's a Clipper Blade  
for Every Job!

### The Smaller the Masonry Project — the MORE IMPORTANT the Savings to be made with a CLIPPER MASONRY SAW

Amazing speed and economy guaranteed when cutting GLAZED TILE, FACE BRICK on any job.



CONCRETE PRODUCTS or CINDERBLOCKS zipped through in seconds, no matter how complicated the shape.

REFRACTORY repairs to FIRE BRICK construction—choose DUST-LESS (wet) or Dry Clipper.



Complete portability and flexibility in masonry cutting when cutting NATURAL STONE.



### DIRECT FROM FACTORY TO USER

### MAIL THE COUPON NOW!

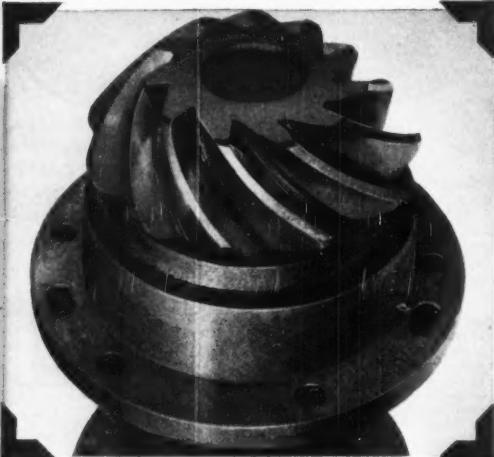
CLIPPER MANUFACTURING COMPANY  
2809 S. WARWICK • KANSAS CITY 8, MISSOURI  
Send TODAY information on the FREE TRIAL offer and complete literature and prices on the 1950 Clipper Masonry Saws.

NAME _____	
COMPANY _____	
STREET _____	
CITY _____	ZONE _____
STATE _____	73

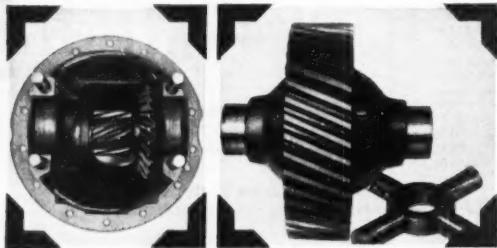
# STANDARD ENGINEER'S REPORT

DATA  
 LUBRICANT RPM Multi-Service Gear Lubri-  
"Semi" Truck and Trailer  
 PART Final drive-Timken U-200 Axle  
Long distance freight haul-road elev.  
 CONDITION 0 to 7200 ft. weather 20° to 125° F.  
 LOCATION Los Angeles-Albuquerque N.M.  
 FIRM Illinois-California Express Co., L.A.

## Hypoid gears in good condition after 332,711 miles!



RPM MULTI-SERVICE GEAR LUBRICANT was used exclusively in the final drive from which this hypoid pinion was pulled — 459,981 miles since it was new and 332,711 miles since last overhaul. As photo above indicates, none of the gears in the unit was worn enough to warrant replacement.



ALL PARTS OF THE ASSEMBLY WERE PUT BACK IN SERVICE. Note their excellent condition despite 332,711 miles of highway work in extremes of load and weather conditions. The rear end was only taken down because the truck it was in was temporarily tied up in the shop for engine adjustment and service.

### How RPM Multi-Service Gear Lubricant prevents wear in hypoids



- A. Contains a special compound that reacts chemically with metal and forms protective lubricating coating . . . resists rubbing action of hypoid gear teeth.
- B. Withstands extreme temperatures and pressures . . . highly oxidation resistant — prevents excessive deposit formation.
- C. Provides lubricant for integral bearings and other parts. Will not separate. Inhibitors resist rusting and stop foaming in gear cases.

REMARKS: This final drive was in a transport unit hauling average gross loads of 68,000 pounds between Los Angeles and Albuquerque, New Mexico. The route is through desert and mountains from below sea level to 7200 feet. Some grades rise 2000 feet in 10 miles. Weather temperatures range from sub-zero to 125° F. in this area.

The final drive was in service from 13,000 to 14,000 miles per month. The RPM Multi-Service Gear Lubricant was drained and a new fill put in about every 35,000 miles. RPM Multi-Service Gear Lubricant provides longer gear life in all hypoid sets, truck, passenger cars or other installations. It comes in several grades to meet all conditions.



FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

Trademark "RPM" Reg. U. S. Pat. Off.

STANDARD OIL COMPANY OF CALIFORNIA • San Francisco

THE CALIFORNIA OIL COMPANY • Barber, N.J., Chicago, New Orleans

STANDARD OIL COMPANY OF TEXAS • El Paso, Texas

THE CALIFORNIA COMPANY • Denver, Colorado

# Automotive Shovel With Hydraulic Crowd and Hoist Speeds Up Excavation Work

## Unit Reduces Excavation Costs; Loads Up To One Cubic Yard A Minute

MOVING SHOVEL LOADERS to and from jobs is one of the most expensive unproductive costs in excavation work. Contractors lose hundreds of hours and spend thousands of dollars annually moving this equipment. Developments since the war show that contractors can be relieved greatly of these costs. One of the most successful developments has been the manufacture of the rubber-tired Dempster-Diggster shovel loader that travels at truck speeds.

### Digs Through 15 Foot Bank

Construction men have found that on big jobs the Dempster-Diggster has no equal for working in tight places and for freeing big shovels for heavier work. The Diggster has an 8 foot 10 inch crowding reach, will dig through a 15 foot bank, and will dig 15 inches below grade.

Manufacturer's tests and contractor's reports show that the Diggster will load up to one cubic yard a minute. This speed in excavation is accounted for, mainly, by the Diggster's exclusive independent hydraulic crowd and hoist action, the hydraulic steering, and wheel-type traction.

The power crowd permits bucket to keep digging until loaded . . . no digging with wheels. The hydraulic steering gives the driver sensitive, finger-tip control. When accelerated, a one-handed twist of the steering wheel puts the machine in any desired position. By operating on rubber-tired wheels, the



THE DEMPSTER-DIGGSTER is shown here digging out a 15 foot bank of hard chert. The power crowd permits bucket to keep digging until loaded . . . no digging with wheels.

Diggster, of course, can move at the fastest possible speed.

### Not A Fair Weather Machine Only

Under adverse conditions on a state highway near Charleston, W. Va., recently, the Diggster loaded 150 cubic yards of sticky blue clay in only three hours. The work consisted of cleaning up slides on 14 foot embankments on both sides of a concrete road. The weather was not cooperative, inasmuch as considerable rain fell the night before. But the Diggster showed no tendency to slide. The job foreman stated that it loaded more material in two hours than the  $\frac{3}{4}$  and  $\frac{1}{2}$  cubic yard truck shovels normally did in an entire day. This and many other operations in inclement weather have proved that the Diggster is not a fair weather machine only.

The Dempster-Diggster has a 15 foot turning radius, is 20 feet long when bucket is in traveling position, and is nine feet and six inches in height.

Four standard interchangeable buckets of two types are available. Digging buckets with four bottom teeth in 1 and  $1\frac{1}{4}$  cubic yard (heaped) capacities. Materials handling buckets in  $1\frac{1}{2}$  and 2 cubic yard (struck) capacities.



ENCLOSED STEEL CAB protects operator against inclement weather.

### Crawler Traction Available

For fast, efficient operation in difficult terrain, the Diggster is available with crawler-type traction.



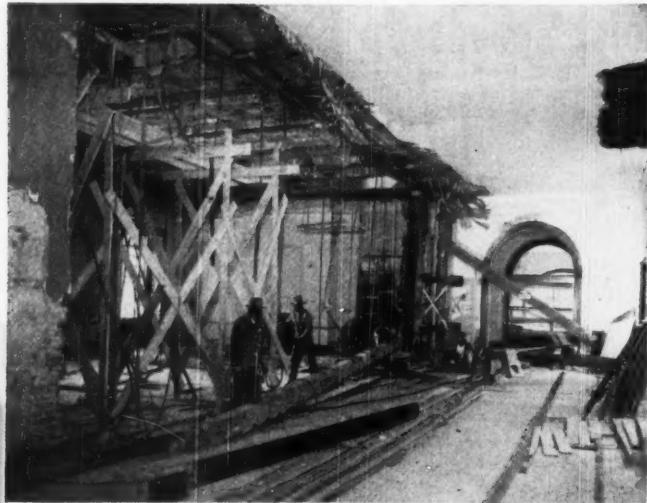
Complete information and prices may be obtained by writing the manufacturer, Dempster Brothers, Inc., Knoxville, Tenn.



### DEMPSTER BROTHERS

350 SHEA BLDG.  
KNOXVILLE 17 TENNESSEE

## Construction News in Pictures...



**CHANGEOVER**—Wooden timbers and beams are removed on second floor to make way for steel replacements on general renovation of White House in Washington, D. C. \$5,400,000 job is scheduled for completion in late 1951. John McShain Inc. of Philadelphia is general contractor.—Wide World Photo



**LONG SLIDE**—Riggers of Consolidated Western Steel Corp. prepare 5-part line to lower 12-ft-dia discharge pipe in Grand Coulee Dam tunnel. Guy derrick sets carrier sled on timber skids which run to bottom of shaft. Two safety lines are fastened by C clamps.—USBR Photo



**SPREADING OUT**—Stonework and fireproofing follow right behind steel erection at 21-story addition to Fawcett building at 44th Street and Avenue of the Americas (6th Ave) New York City. Tishman Realty & Construction Company, NYC, are builders.

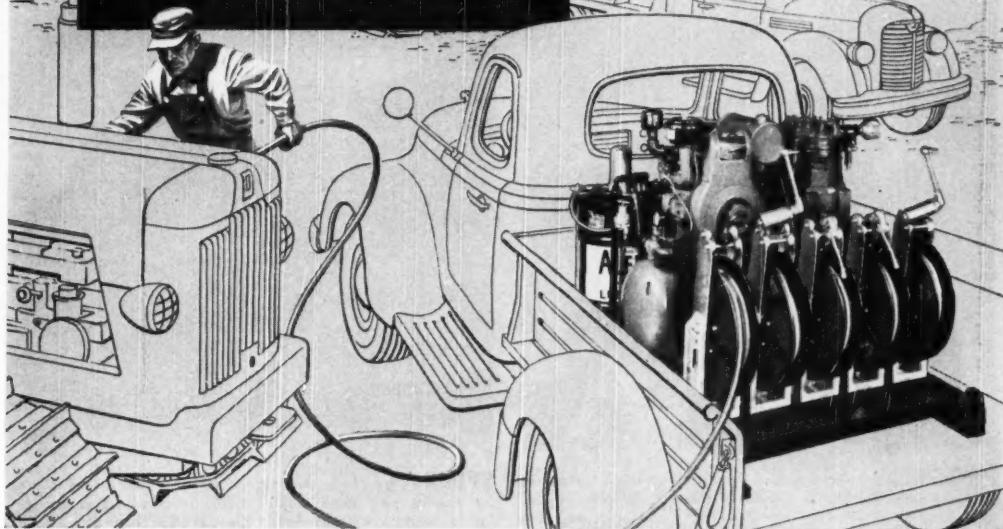


**PENSTOCKS**—One of 90 sections of 13 1/2-ft-dia pipe for penstocks on Hungry Horse Dam in Montana is jockeyed over snow-covered road past diversion tunnel. Mixing plant above has just begun its 1950 quota of 1,000,000 yd of concrete.—USBR Photo

(Continued on page 36)

# ALEMITE

## Portable Service Stations are S-E-C-T-I-O-N-A-L-I-Z-E-D!



### Now!—Set Up Just the Rig You Want to Suit Your Individual Greasing Needs

Now you can select just the equipment you need for a tailor-made portable greasing rig. New *sectionalized* Alemite units allow whatever choice of chassis pumps, gear-oil pumps, reels and hand-meters you require. Alemite combines them into platform units that can be put together into one, portable outfit for on-the-job lubrication of your trucks and equipment.

No matter how far afield your construction equipment is working, a tailor-made portable service rig assures faster, better lubrication at lower cost. Air-operated pumps deliver oil or grease from 100-lb. bulk containers direct to the bearings on your truck and equipment. Downtime for lubrication is cut. Repairs and maintenance costs are slashed because Alemite methods keep lubricants *free* from dust and dirt—the most common cause of all bearing failures.

Heavy duty pumps, reels and accessories are also available for 400-lb. and 54-gal. capacity drums.

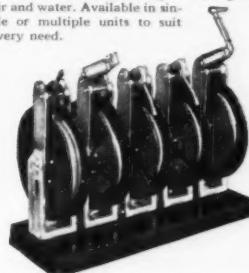
WRITE TODAY for your *free*, illustrated catalog! Address Alemite, Dept. F-50, 1850 Diversey Parkway, Chicago 14, Illinois.

# ALEMITE

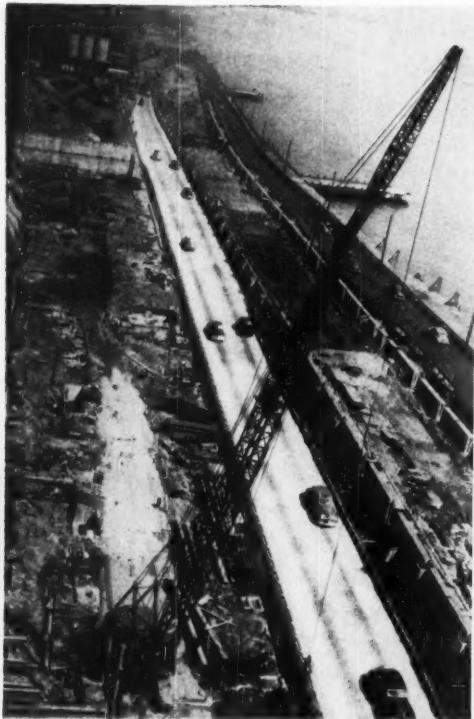


**Alemite Pumps**,  
air-operated, for delivering chassis grease and gear oil from 100-lb. drums. Available for individual or "group" installations.

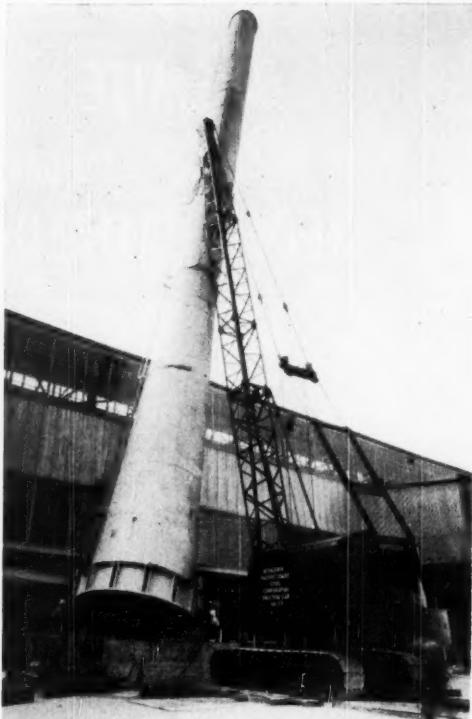
**Alemite Hose Reels** for high and low-pressure delivery of chassis grease, gear oil, engine oil, air and water. Available in single or multiple units to suit every need.



## CONSTRUCTION NEWS ... *continued*



**PROGRESS**—Paved service road leads traffic to and past United Nations Secretariat and site of Meeting Hall area at 42nd Street and East River, New York City. New highway between existing lanes will be part of F. D. Roosevelt Drive.—Wide World Photo



**SPEED**—New 26-ton steel furnace stock for Bethlehem Pacific's Los Angeles plant came in three sections; was connected and set up on concrete base by 40-ton capacity Northwest crane. Total weight with refractory brick lining will be 150 tons.



**MISCHIEF**—Two curious boys, 9 and 11 yr old, clambered aboard a \$20,000 tractor and scraper on Hollywood Freeway project outside Los Angeles, fiddled around with levers, and started huge juggernaut rolling. Earthmoving equipment went over an

embankment and down 225 ft of slope, coming to a halt on top of a similar rig with double sheepfoot rollers attached. Miraculously, nobody was hurt including mischievous boys, who learned a lesson along with contractor.

*(Continued on page 38)*

# Flame Cleaning

## prepares bridge members for painting

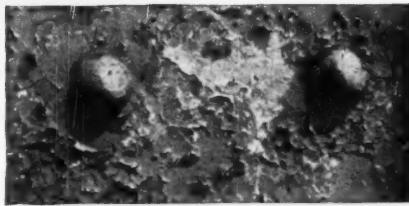


Leading engineers find that flame cleaning quickly prepares bridges, trestles and other metal surfaces for painting—with savings up to one half the cost of hand scraping and chipping. Further, in addition to actual dollar savings, they found that the flame cleaned surface produced a better finished paint job.

Quickly, easily and safely applied, the Airco flame cleaning process provides a clean, warm and dry surface conducive to a lasting paint job. The oxyacetylene flame cockles old paint, loosens scale and drives off hidden moisture . . . gives longer paint life to all kinds of steel structures.

New steel structures, too, should be flame cleaned before application of the prime coat of protection. This method loosens semi-tenacious mill scale and leaves no corrosion-starting dirt or hidden moisture. Future maintenance costs are reduced to an absolute minimum.

For further details write for folder ADG-1066B—"Flame Cleaning and Dehydrating Old Steel Structures", and folder ADG-1067A—"Flame Cleaning and Dehydrating New Steel Structures". Write your nearest Airco office.



BEFORE — Close-up view shows conditions of paint-lift heavy rust and scale that were met.



AFTER — The finished job after flame cleaning. A smooth, clean, dry surface ready for a lasting coat of paint.



### AIR REDUCTION

Offices in All Principal Cities

Headquarters for Oxygen, Acetylene and Other Gases . . . Carbide . . . Gas Welding and Cutting Apparatus and Supplies . . . Arc Welders, Electrodes and Accessories

## CONSTRUCTION NEWS ... *continued*



**CLEARING LAND**—Huge 8-ft-dia steel balls tied together with heavy logging chains will be used by Wixson and Crowe Inc. and J. H. Trisdale, Redding California clearing contractors to snag down brush and small trees in vast 25,000-acre reservoir

area at Hungry Horse Dam, Montana. Tractors will drag 4½-ton balls down hillsides with 30 ft of taft chain in between, held at constant 4-ft elevation to prevent snagging on large stumps left after logging operations.—USB Photo



**CONTROL**—Clamshell tagline is fastened to block, preventing undue swing of wall-form units on underpass job by L. G. DeFelice & Sons Inc., North Haven, Conn. Lorain Moto-Crane is working near Devault, on part of Pennsylvania Turnpike extension.



**FROM MISSOURI**—Associated General Contractors of Missouri's President for 1950 is L. J. Kissick, Sr., Kissick & Son Construction Co., Hickman Mills, Mo.



**APPOINTED**—George B. Finley, formerly with Texas Highway Dept., heads new Asphalt Institute office in Austin.

# The Amazing **BARCO** **PEGSON** **RAMMER**



for soil compaction close to walls, culverts, abutments and in narrow ditches

On backfill tamping jobs even in narrow trenches, the Barco Rammer has no equal. You save the cost of removing excavated material and replacing with sand. More important, you replace the soil to adequate compactness and avoid settlement troubles. This efficient Barco Rammer gets in the hard-to-reach areas where rollers can't be used. It is simple to operate and requires no special operators. Always ready to work, its simple design and sturdy construction practically eliminate repair and maintenance costs. For more information, write Barco Manufacturing Company, 1812F Winnebago Avenue, Chicago 40, Illinois. In Canada: The Holden Co., Ltd., Montreal.

**BARCO** GASOLINE RAMMER

FREE ENTERPRISE — THE CORNERSTONE OF AMERICAN PROSPERITY

**HARD ROCK LUG**

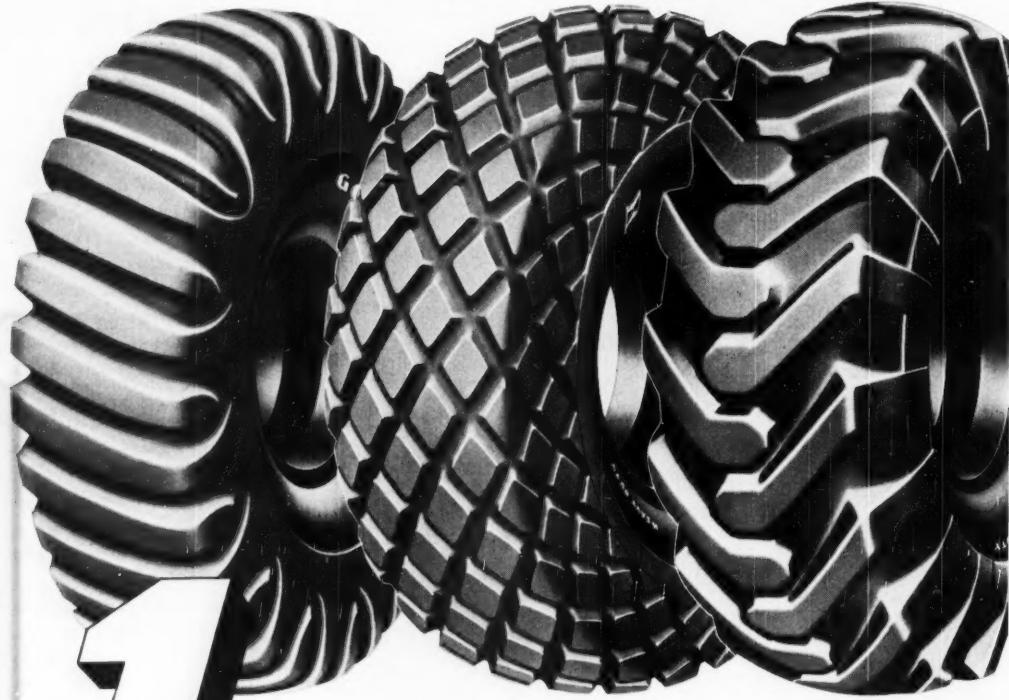
*super-tough champ for all types of rock work.*

**ALL-WEATHER**

*finest for flotation, rolling big loads faster.*

**SURE-GRIP**

*tops for drive-wheel traction on graders and pans.*



**1<sup>st</sup> for Stamina, Mileage,  
Economy**

WHATEVER type of construction jobs you handle, you'll find a Goodyear time-proved tire specially engineered in body and tread to give you better service, lower cost-per-mile. For each Goodyear super-tough work tire is job-designed to meet the needs of a particular type of construction work. *That's why, year after year, more tons are hauled on Goodyear tires than on any other kind.* Remember, always BUY and SPECIFY Goodyear—it pays!

**GOOD**  **YEAR**

*We think you'll like "THE GREATEST STORY EVER TOLD"—Every Sunday—ABC Network*

All-Weather, Sure-Grip—T. M.'s The Goodyear Tire & Rubber Company

## Ready or Not . . . This Is It!

IN THE MIDST of the greatest construction market in all history the contractors are singing the blues. Manna from Heaven in the form of unprecedented contract volume is showering down about them, but they complain about its lack of nourishment.

Bidding has become highly competitive. Cut-throat competition, say some. Tough, no-profit competition, say others. Just how serious is this competition? Is it good or bad for the contracting fraternity? Is it in the public interest? Let's take a look.

Apparently the keen competition arises from a greatly increased number of contractors in the business. And more contractors mean more bidders on every job. Jobs today regularly attract from 15 to 30 bids, in contrast to one, two or at most four or five only three years ago.

With a large number of bidders, the low bid is quite likely to be way below the average. In fact, the low bidder is always so low, according to all other bidders, that he is certain to lose his shirt, pants and everything else. But that has always been a common complaint among contractors. The low

bidder is ever a blankety-blank chiseler and so-and-so.

So far casualties among low bidders have not been beyond average experience. Failures and troubled jobs among contractors have increased somewhat in numbers, but not in percentages, which is significant. Mortalities in construction are nothing new, so naturally more contractors on more jobs result in a greater number of financial difficulties.

But weeping and wailing and throwing in the crying towel won't help—nor will they wring any sympathy from the public or awarding authorities. Here is one significant fact about competitive construction prices. On every project the going price for that work is established by one of the group of contractors bidding the job. There is no public regulating body setting the rates; there is no Washington bureau telling contractors what they can bid; even the economic law of supply and demand does not greatly affect prices today, for the supply of jobs has kept fairly apace with the increase in number of contractors. The contractors set their own prices, and only they are to blame if they happen to be uneconomically

low. And they can't put all the blame on the neophytes and upstarts in the business, for examination of bids will show that often old established firms are way low. And, of course, not every low bidder loses money or goes broke.

Could it be that contractors in general weren't ready for this inevitable period of fierce competition? Are they still operating in the clouds of immediate post-war conditions when regardless of how they operated they couldn't lose money? Have they failed to tighten up lax supervision, failed really to plan their jobs for efficient operation, neglected to equip the work properly to produce at lowest possible costs?

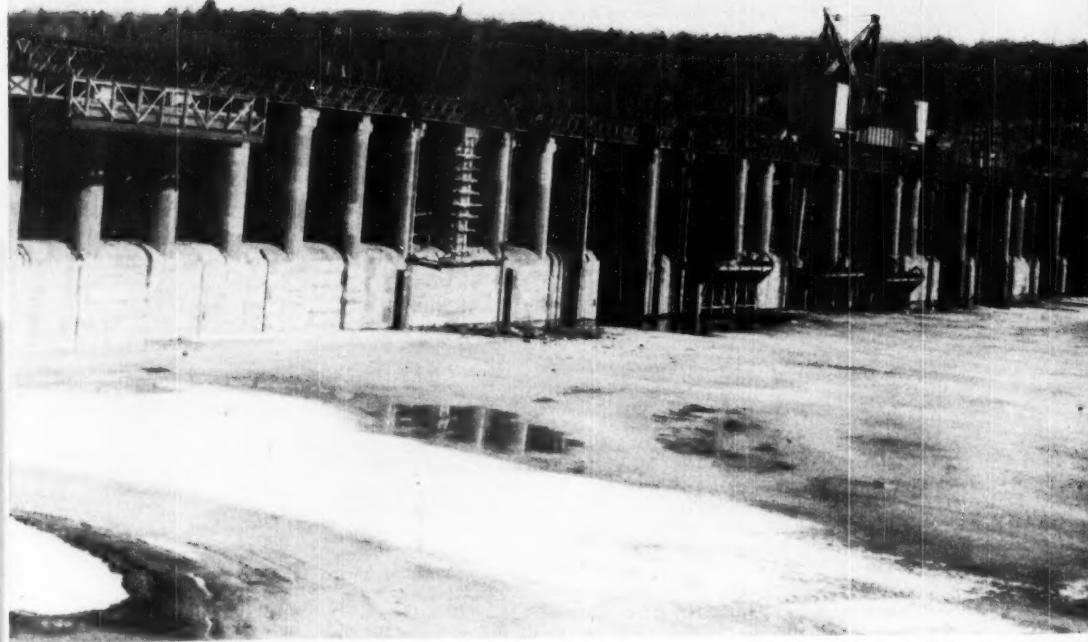
Ready or not, this is it. Tough competition is here, and it looks like it is here to stay. But we have utmost faith in the ability of contractors to meet any situation, physical or economic, and to refrain from panicky, gotta-have-a-job-at-any-price bidding. And we don't think they intend to use the wailing wall as a substitute for hard-plugging, efficient, cost-cutting procedure.

Rich



**SPIKE SEZ:** Preventive Maintenance is the program for keeping our equipment rolling and producing. Yep, we anticipate troubles before they happen—and down time is cut way down. Sure 'tis a swell idea

the boys on Construction Methods and Equipment have in making Preventive Maintenance the theme of their special Construction Equipment Maintenance issue to be published in July. Watch for it.



**Closing Sluiceways for Next Lift Is Routine . . .**

## **Winter Dam Construction in Canada**

LOW TEMPERATURES and biting winds are bothersome up in northern Ontario, but they don't faze construction men or slow down or stop concreting operations. The Hydro-Electric Power Commission of Ontario is plugging right along with its series of dams across the Ottawa River, the largest and most impressive of which is the Des Joachims project, 140 mi up river from the Dominion capital.

Here they pour in sub-freezing temperatures, carry the concrete on conveyor belts, drop it down through long runs of elephant trunks, run up 40- and 50-ft lifts, pump the mix through 1,300- to 1,400-ft lengths of pipe, rig up unconventional Bailey bridging, and use all sorts of methods which are frowned on in the US. And they're

By JAMES M. CONNOLY

Assistant Editor

doing a darn good job of it, too.

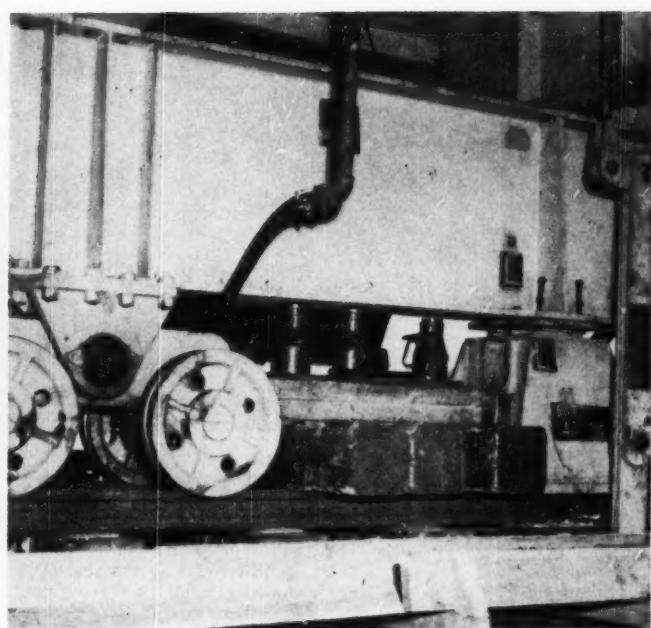
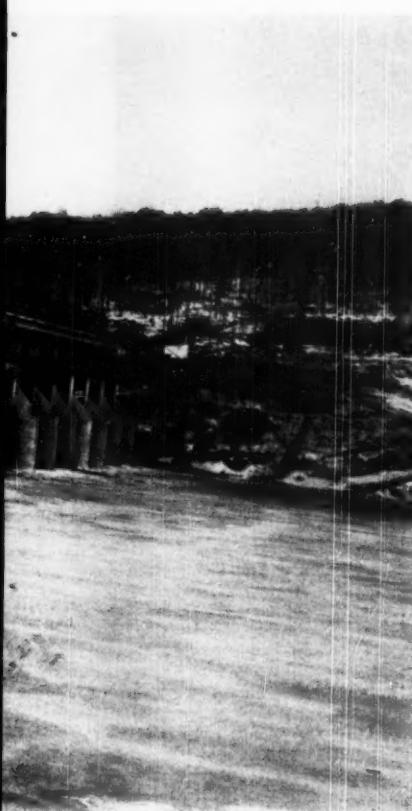
The 2,400-ft dam across the Ottawa required more than 460,000 cu yd of concrete to bring it to its maximum height of 180 ft. As this dam rose, the water swung around through McConnell Lake paralleling it on the north where a smaller control dam is under construction for the water at the new high level.

The automatic concrete mixing plant on the Quebec side of the big main dam is a veteran of the famous Shipsaw job at Arvida, Quebec, and boasts four 2-yd Smith tilting mixers as well as storage for 980 yd of aggregate and 12,000 bbl of cement. Design out-

put is 160 cu yd per hr and maximum has reached 200 yd.

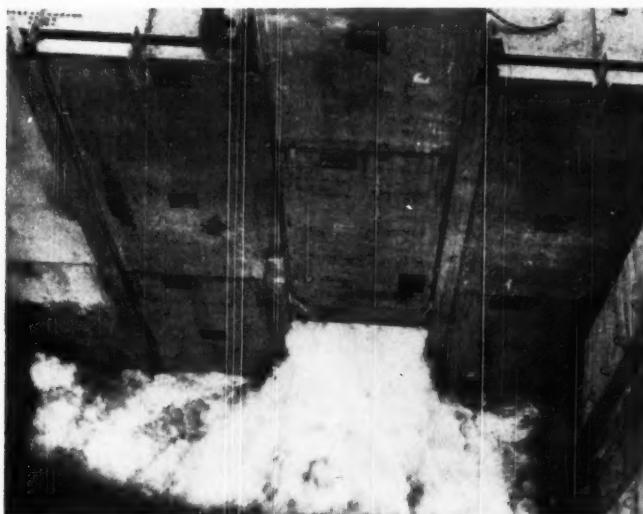
Concrete was paid out through a swivel hopper directly on two 30-in. conveyors which ran out the length of the main dam supported by double-double Bailey bridging on towers of the same material. Face and mass concrete being of different mix, the double conveyor allowed both types to be poured at once if needed. The mix was removed from the belts by movable track-mounted trippers and dropped through chutes and strings of elephant trunks where required. Lifts of 40 and 60 ft were not uncommon, and so-called low-lift concrete is not used by the Commission.

At McConnell Lake dam the progress was similar. Because of



KEY TO POURING operations at Canada's Des Joachims project is custom-built 75-ton gantry which first serviced main dam, then was dismantled and erected at McConnell Lake (left). Running full length of structure on multiple Bailey bridging (above), rig transfers three unwatering gates with shutters to allow consecutive pours in sluiceways. Gate shutters are stored in tender car at each end of gantry. During winter temporary

boxes are erected on tenders with unit heaters to remove ice before gate is placed in next location. Before lifting or lowering operation, gantry weight is transferred by hydraulic jacks from wheels to blocks directly over piers. Rig is then tied with 2½-in. pins and hinge straps to eyes set in pier tops. Tied in front to gate hanger brackets for wind loading, it is then ready for a transfer operation.

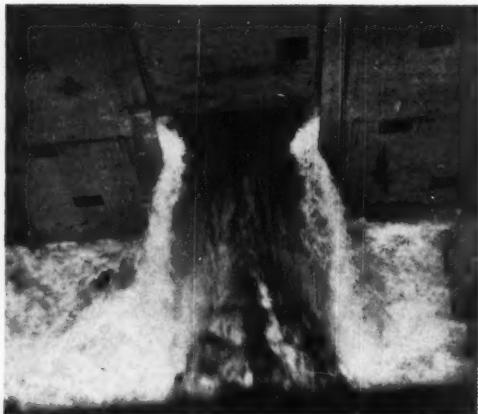


GATE IS CRACKED by lifting center shutter to divert water over recent pour. Each of five shutters weighs 4½ tons, is disconnected

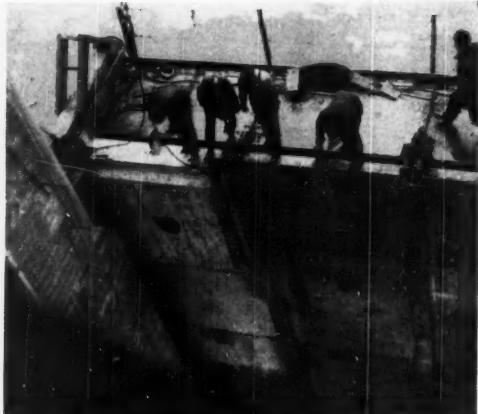
at halfway height for ease in handling. Rollers run in paths in soldier beams and rubber seals prevent leakage during subsequent



forming and pouring. When shutters have been placed in tenders, 50-ton gate frame is lifted and tied on gantry for move-



WITH JACKING BLOCKS REMOVED, gantry travels to next unwatering position for closing process, just the opposite of removal. Rollers on 50-ton frame run in guides on upstream dam face, then retract into frame to insure seal of rubber against concrete. Shut-



ters, freed from ice in tender cars, are lowered in outside slots first, working to final drop in center (left). Occasionally uncooperative shutters are given a nudge with large concrete block (right) in pile-driving fashion.

the volume of work for Ontario Hydro, pier construction was let out to Atlas Construction Co. Ltd., of Montreal, and work began in the dry. As closures at the main dam increased in height, and pool level rose higher and higher, the coffer-dam was blown upstream from McConnell and the water flowed through the sluice openings of the control dam into the diversion channel.

In November of last year Atlas completed the piers and moved out. With them went their mixing plant. From there on Ontario Hydro took over on the pouring of the sluiceways and Pumpercete was the password. Two Pumpercete machines were set up on the south end of the dam and concrete trucked in open end-dump Euclids—in 6-yd loads—from the main dam mixer. As of April 1, 1950

they had poured more than 37,600 yd in the sluices with 8,000 to go.

On both dams the diversion sluices were kept dry by use of three 50-ton steel unwatering gates, along with 3 sets of five steel drop-shutters weighing 4½ tons each. An unorthodox quintuple-single Bailey bridge spanned the piers and carried tracks for a custom-built 75-ton gantry crane which transferred the unwatering

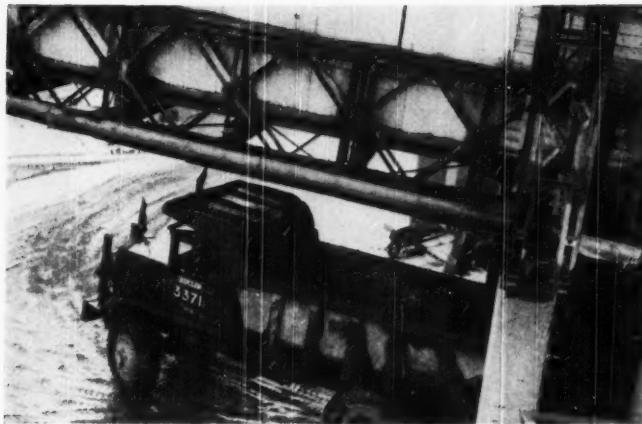


WORKING PLATFORM for concrete pour hangs from pier tops on wire ropes. Lumber is hoisted for forms by line through block above and back down to winch at foot of slope. Platform is covered with tar paper

to form roof over pour during freezing weather. Meanwhile high-pressure steam feeds six 300 BTU unit heaters to dry out sluices, along with eight oil-fired salamanders to remove any frost and ice. Note water



rushing through adjoining sluices and forming huge curves of spray ice which powder monkeys remove with small charge to allow formwork to proceed. Lumber is removed and delivered by cableway spanning dam.



FIRST EUCLID ROARS OUT from under mixing plant at main dam with 6-yd load for McConnell Lake pour (left). Sloping ramp houses conveyor belts which carried concrete

for entire main dam directly from mixing plant. McConnell piers were poured with similar conveyor by Atlas Construction Co. of Montreal but Ontario Hydro took over



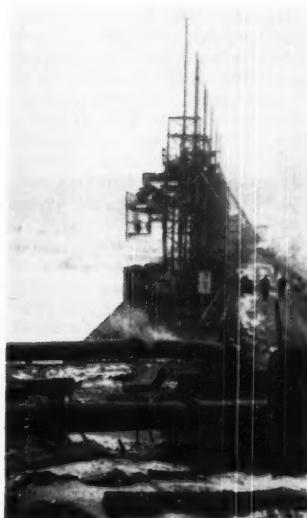
sluice closing pours. Average lift requires 200 to 250 loads. On arrival at McConnell, Eucs end-dump into pre-mix hoppers above two Rex machines that pump mix . . .

gates to each of the working areas. But what about winter weather protection for the concreting operations? Steam lines heated the aggregate reclaiming tunnel and prevented the hatches from freezing. Jets from the steam line warmed the sand to ease the flow on its way to the mixer. Water was heated to 180 deg in the main storage tanks and any loss of heat was made up by a steam jet in the

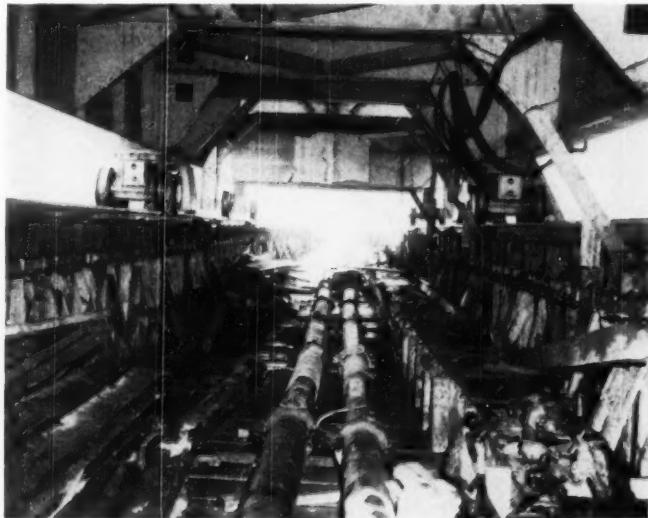
measuring tank at the mixer which brought it right back up to the desired temperature. For economy, all heat is applied in mixing water only, if possible. The desired temperature at the mixing plant was 60 to 70 deg F. Low heat cement was used throughout and in normal pouring weather heat of hydration was no problem.

The concrete conveyors were housed for the entire length with

corrugated metal siding and unit heaters were placed every 150 ft to temperature of the air above freezing. Six to eight unit heaters were installed in the canvas-covered sluices as soon as the unwatering gates were dropped. Supplied with 80- to 100-lb steam pressure, they gave off 144,000 BTU per hr. Pours were completely enclosed with fire-resistant tarpaulins and steam kept the tem-

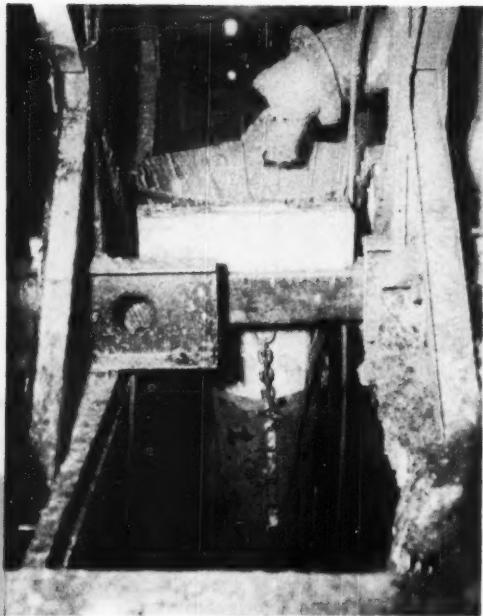


. . . OUT ACROSS DAM, past six main sluice gates (left) underneath big gantry (right) and on to stop-log sluice being poured. Longest Pumpcrete push, to farther end of dam, was 1,465 ft plus two turns, one

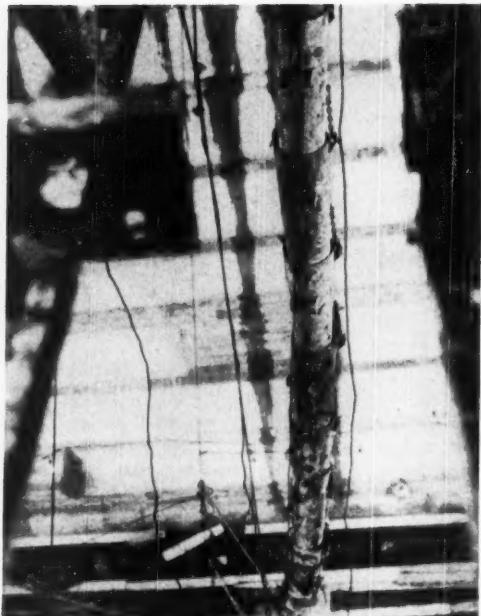


90 and one 45. Pour pictured runs more than 1,300 ft. Box paralleling Pumpcrete tubes contains steam and air lines, covered with sand and provided with tap-ins all along way. Although plain concrete was used in

piers, some sluice mix is air-entrained. Darez and Pozolith air-entraining agents are used alternately. Life of concrete and wearing effects of water on various types will be studied during future years.



**END OF LINE.** Concrete plops out into first of two sets of hoppers and elephant trunks, hung from same Bailey bridging which supports gantry tracks; then into second set hung from working platform below—down into pour. Note tar paper cover on platform which



boxes up sluiceway along with overlapped tarpaulins on front and back to keep steam in and cold weather out. Forms are not strained unduly during pour because of slow rate of rise of concrete (only about 1 ft per hr).



**SECOND PUMPCRETE LINE EMPTIES** into hopper and trunks slung from front of sluice. Here Bill Bonn, superintendent at McConnell, watches mix during snowstorm. Atop

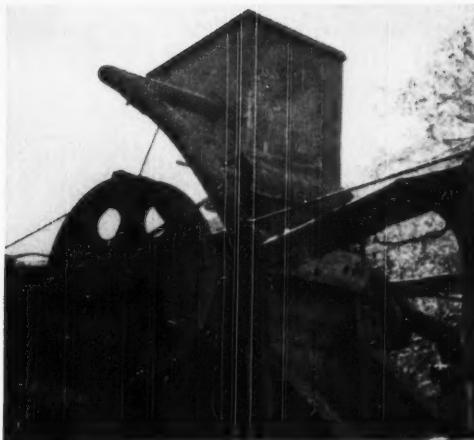


main dam (right) are Bill Hogg, senior resident engineer and A. A. Richardson, project manager for entire Des Joachims construction job.

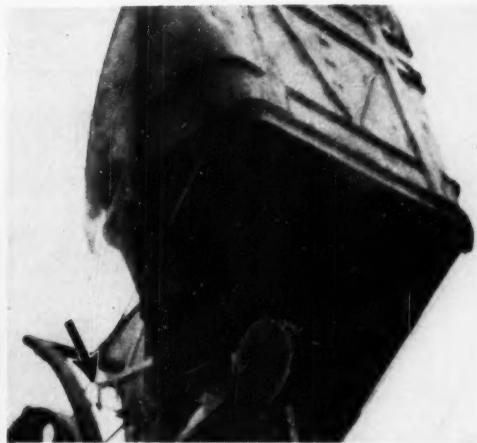
perature close to 50 deg throughout.

That's how Ontario Hydro is operating—and has been operating all through their vast 600 million dollar post-war expansion program. Of the 906,000 yd of concrete poured between October 1946 and April 1950, 14% was placed at temperatures below zero, 9% between zero and 10 deg, and 31% between 10 deg and the freezing point. Only 45% of all the concrete on the generation jobs has been placed in temperatures above freezing.

Supervision starts back in Toronto with R. L. Hearn, general manager and chief engineer; Dr. O. Holden, assistant general manager-engineering; J. R. Montague, director of engineering; E. T. Ieson, generation engineer; J. S. Crerar, project engineer; D. Forgan, director of construction; G. Mitchell, generation construction engineer. Up at Des Joachims, A. A. Richardson is project manager; Bill Hogg, senior resident engineer; Dan Hughes, general superintendent; and Bill Bonn, construction superintendent in charge of the McConnell Lake Dam. We are indebted to Keith Scott, chief guide and photographer for his help.



CALCIUM CHLORIDE for mix is kept dry by running hot exhaust pipe through hopper. Just enough for each batch falls into cylinder...



...which is activated by F-shaped arm (arrow) each time skip of aggregates is lifted. As skip lowers, cylinder returns for next load.

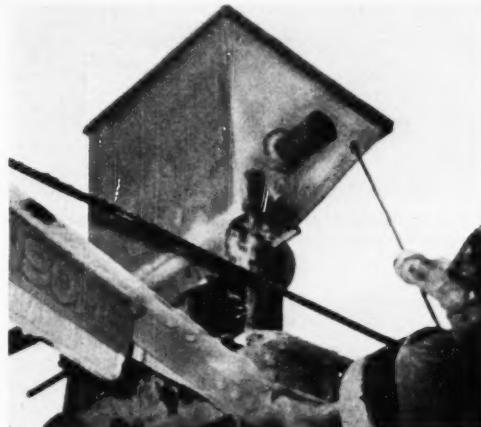
## Calcium Chloride Automatically Fed to Concrete Mix

GETTING JUST THE right amount of calcium chloride into the mix is an important part of many concreting operations. On the Du Pont Circle Underpass in Washington, D. C., an automatic feeding device has been tried out and found to be just the right thing.

It consists of a V-shaped hopper holding 350 lb of calcium chloride which feeds into a wedge-cut in a cylindrical container at the bottom. When the skip is raised to drop aggregates into the drum, an arm trips the cylinder and rotates it, dumping the flake chloride in at the same time. As the skip is lowered, the cylinder turns back for the next batch. The mixer's exhaust is piped through the hopper to keep the contents dry.

Maxwell C. Ramson, equipment engineer in the District of Columbia, designed and supervised manufacture and installation of the first working model on a 34-E Ransome paver. Subsequent plans include an installation at a ready-mix plant.

Bill Raines, paving superintendent for Corson and



WORKING MODEL installed on Ransome 34-E paver proved most efficient on Du Pont Circle underpass job in Washington, D. C. Arrangements are now being made to try installation at ready-mix plant.

Gruman Co., Inc., on the underpass job says that it works fine and saves quite a bit of labor time. The only work involved is to refill the hopper whenever necessary. Plans for the hopper and its installation on various rigs may be obtained from the Calcium Chloride Association, Ring Building, Washington 6, D. C.

### ... And a Distributor Shall Lead Them

IN THE INTEREST of promoting construction engineering courses in technical schools, Milton-Hale Machinery Co., distributors from Albany, N. Y., have made available

its veteran director of sales training, Frank Nikirk, to the University of California to help set up a construction engineering curriculum. Nikirk's services are provided

without cost to the institution because of Henry Hale's interest in the subject and regard for his Alma Mater. A splendid example has been set by this distributor.



FOUR RODMEN PLUS WELDER assemble reinforcing-steel into mats for Parklabrea apartments in Los Angeles. Multi-million-dollar project of Metropolitan Life Insurance Co. has eighteen 13-story buildings, a total of 234 floors.



WELDER TACKS various rods throughout mat to hold unit in shape during handling.

## Welded Reinforcing Saves Time

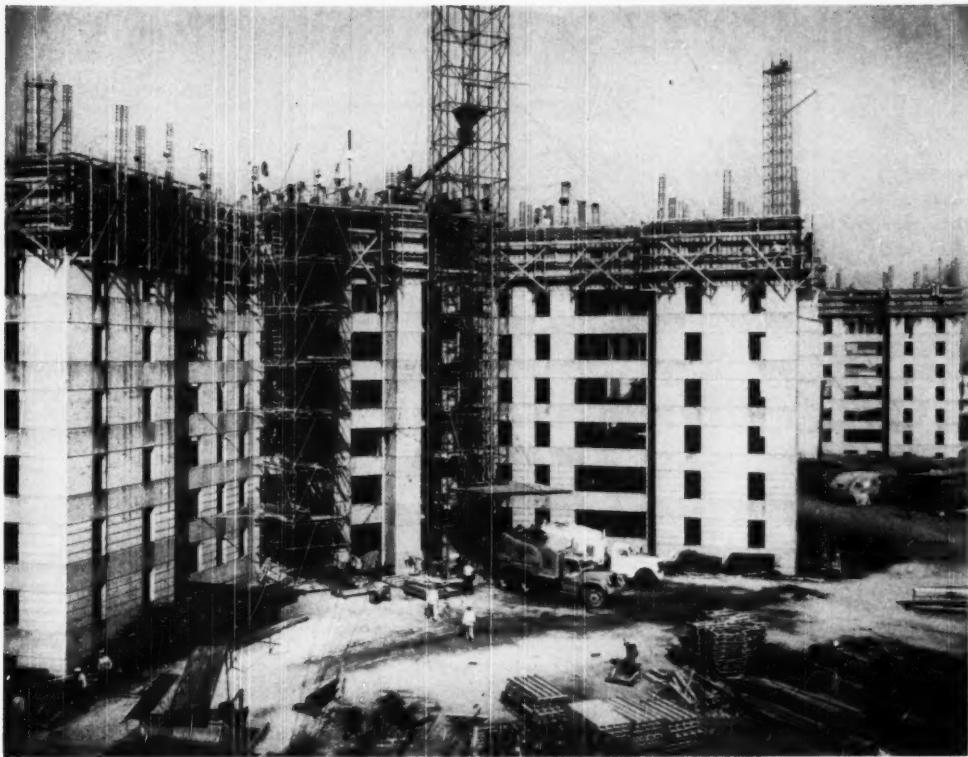
By J. R. MORRILL, Assistant to the Vice-President  
The Lincoln Electric Co., Cleveland, Ohio

**P R E - A S S E M B L Y O F R E I N F O R C I N G S T E E L** is a cost-cutting procedure at the Parklabrea housing project in Los Angeles. The steel bars are assembled into mats in templets, then several of the bars are tack welded to hold them together for handling as a unit. Thus, placing time has been drastically reduced, and costly mistakes in bar setting have been eliminated.

At Parklabrea, eighteen 13-story apartment buildings are under construction. In plan, each building is a spread-eagle shape, much like two Y's with their stems joined. The wings, or branches of the Y, are 48x60 ft. The tremendous size of the project has made it impossible to obtain sufficient skilled

steel workers to place all the reinforcing steel, and an attempt to lay it with the help available proved costly and time consuming. So Anthony C. Meehleis Co., Los Angeles, reinforcing steel contractor, built four pads or templets for prefabricating the eight different types of 12x16-ft. mats with which the wing floor slabs are reinforced.

The templets are wood, with trough-shaped  $\frac{5}{8} \times 1 \frac{1}{2} \times 2$ -in. blocks to hold the steel. Each templet serves for two mat designs, as opposite-hand reinforcing assemblies are simply turned over before placing. A stock of exact lengths of  $\frac{1}{2}$ -in. reinforcing is located next to the templets, piled in neat stacks for quick operation. Four steel workers lay the correct pre-cut



CONCRETE IS DELIVERED by fleet of 9 Jaeger truck mixers that discharge into hoppers at each building. Hopper feeds 1 1/4-yd

bucket raised by American hoist and tower. Some 163,000 cu yd of concrete is going into big private housing project.

rods in the spacer blocks and tie off the joints. A welder follows, tacking the rods at various points to stiffen the assembly and to keep the steel in correct alignment. A 5/32-in. electrode with 200-amp current is used on this operation.

Completed mats are marked by small wooden blocks securely wired to them, and are stored near by on top of others bearing the same number. When needed, mats for a complete wing are loaded on a truck and taken to the building. As a rule, center-section mats are hoisted first, followed by those for each wing. Four mats are lifted at a time.

Two days were previously required to lay the reinforcing steel in the conventional manner, but with the fabricated mats the job is now done in half that time. Approximately 50 man-hours have been saved on each wing—and there are 72 wings on the project.

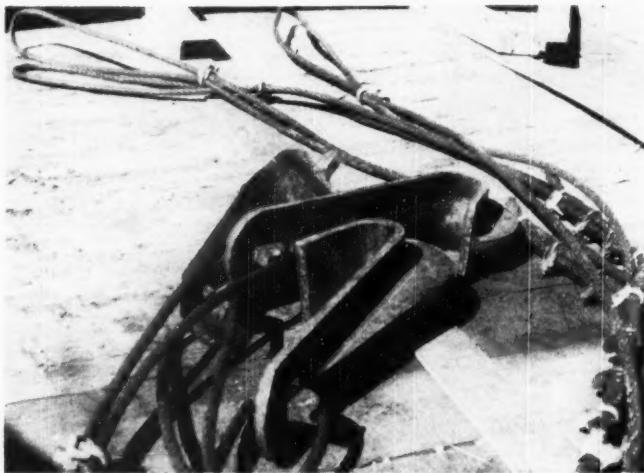
Parklakbrea is a \$50,000,000 Metropolitan Life Insurance Co. project, for which Starrett Brother & Eken, Inc., are general contractors.



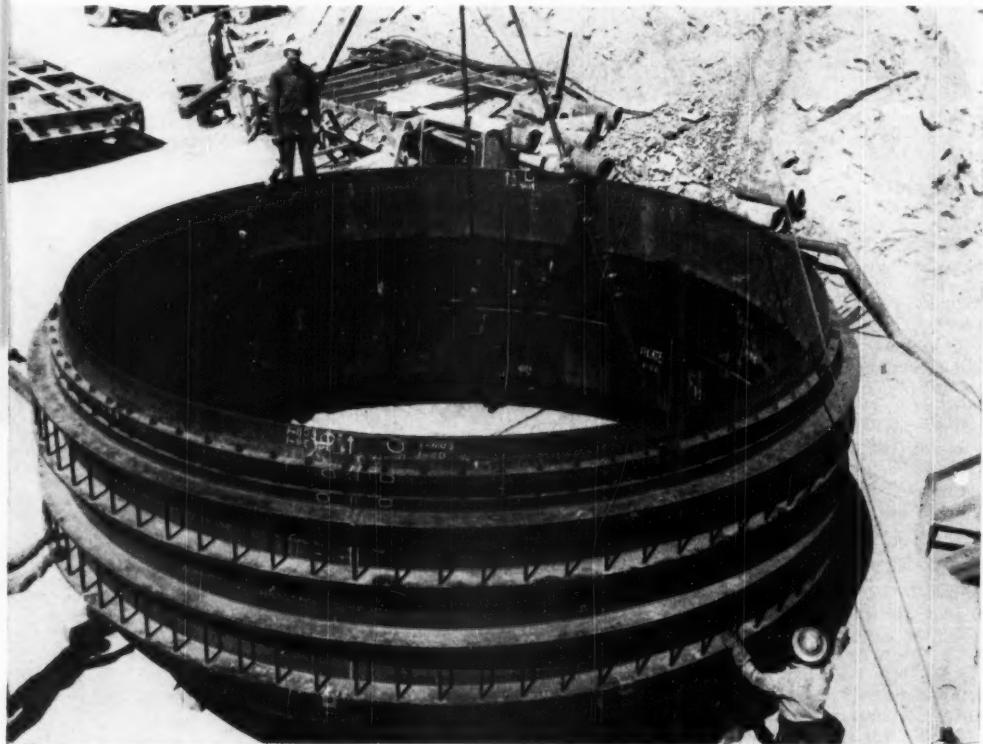
MAT IS EASILY CARRIED and quickly placed by two men. Each wing floor is reinforced by only four mats, whose locations are designated by wooden tags wired to assemblies.

# How to Set 46-Ton Expansion Rings

IN KEEPING with the gigantic scale of everything else at Davis Dam, the ten 22-ft expansion rings for the five penstocks weigh up to 46 tons each. But J. H. Pomeroy & Co., Inc., penstock subcontractor for a joint-venturing combine headed by Utah Construction Co. on the Bureau of Reclamation's project on the Colorado River, worked out a neat method of placing the big rings with some special rigging, as shown here. J. R. MacDonald is project manager for Pomeroy. H. E. Williams is running the job for Utah et al. Southwest Welding & Manufacturing Co. fabricated the expansion units.



1 FIRST you make up some extra-heavy slings with special ribbed hooks of  $1\frac{1}{8}$ -in. plow steel. Three slings did the trick, hanging from one hook on Utah's big trestle crane. Hooks are designed to fit under bottom rim of rings in flat position.



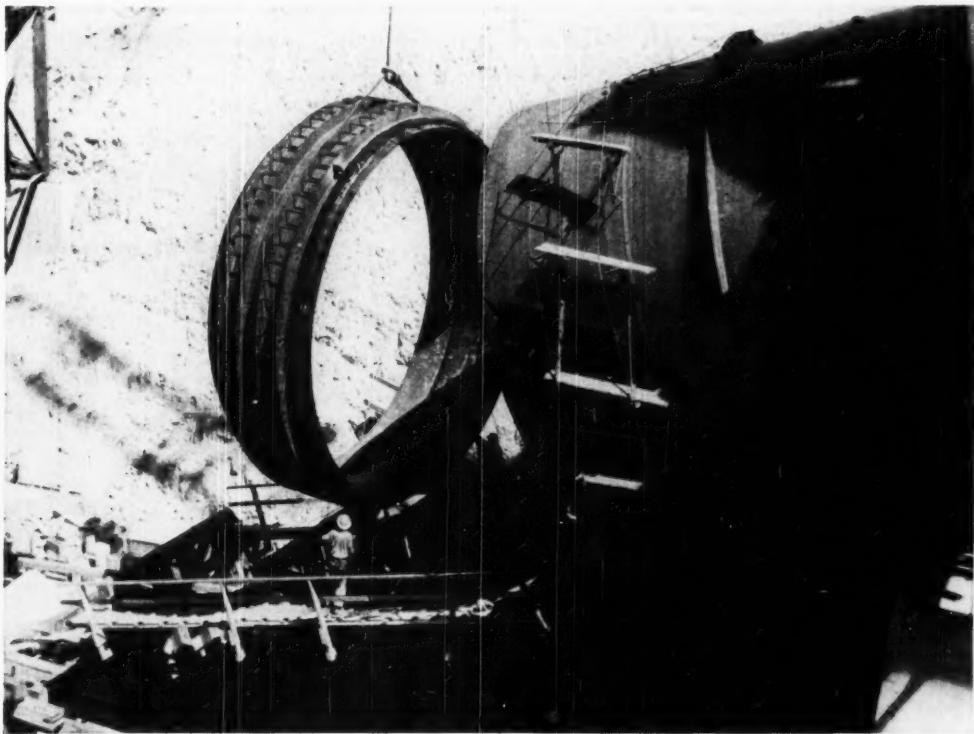
2 THREE-PART SLING with special hooks lifts 46-ton fabricated ring section off lowboy trailer to temporary position on blocks at penstock site. Expansion joints are in three sections, welded

together by straps across inside joints into rigid unit for handling and placing. Straps are cut loose after rings are welded into place in penstocks.



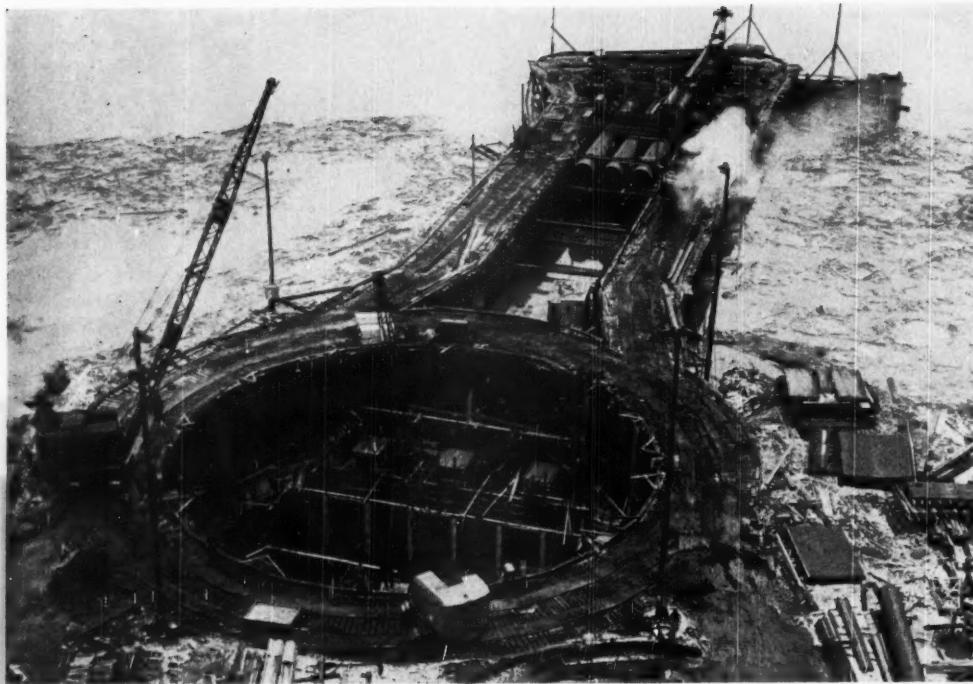
**3** AS EXPANSION UNITS must be set into penstock in near-vertical position, final handling is by single sling of 2 1/4-in. wire rope placed midship around fabricated ring. Temporary wires

hold heavy cable in position until it completely encircles 22-ft joint. Because rings are set in place by big gantry on high trestle, this cable is 90 ft long.



**4** IN UPRIGHT POSITION 46-ton expansion ring is landed on heavy falsework for welding into penstock. Exact final positioning of unit is by jacks and come-alongs. Setting of joints is

complicated by slope of penstocks that tilts rings out of true vertical position. Each of five penstocks requires two expansion joints, so this procedure is repeated ten times.



THREE 78-IN. PIPES for condensation water intake at Venice, Ill., power plant are fabricated into 40-ft assembly, complete with reinforcing, for lowering 50 ft beneath Mississippi River where

they will be encased in tremie concrete. Cofferdam for intake is never unwatered. Pumpwell is under construction in pumped-out circular cofferdam braced only by concrete ring wales.

## Big Intake Built in Flooded Cofferdam

WITHIN A SHEET-PILE COFFERDAM that was never unwatered—although it extended 250 ft into the Mississippi River—a water intake was recently completed at Union Electric Power Co.'s Venice (Ill.) plant. Three suction lines and a warming line for the submerged intake were assembled in 40- and 50-ft lengths in structural frames above water, then were lowered 50 ft into the flooded cofferdam for under-water connection and tremie concrete encasement. The intake is supported by Drilled-In caissons socketed into rock 80 ft below water.

The intake supplies condensation water to a 400,000-kw steam-electric generating station through a deep pumpwell at the river's edge. Suction lines are 78-in. steel pipes 9 ft c-c. Pipe centers are at El minus 13.75 (mean river stage is El 12, normal high water is El 25). Above them on the upstream

By JOHN HERLIHY  
Superintendent  
Western Foundation Corp.  
New York City

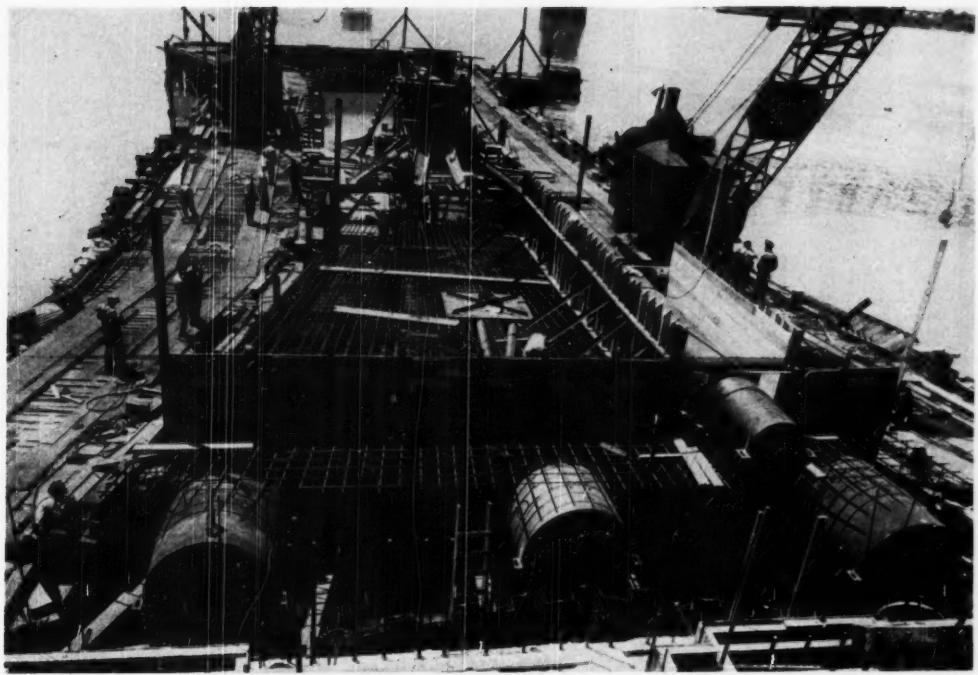
side is a 42-in. warming line through which hot water is forced to the intake mouth to prevent formation of ice.

Intake cofferdam sheeting (MZ-32 section, 65 to 80 ft long, tops at El 30, tips a minimum 11 ft below future excavation level) was driven from, and tied back to, a work trestle surrounding the site. Large holes were cut in several of the sheets before driving, because the 29x260-ft cofferdam was never to be pumped down. It served as a protective basin which was excavated 25 ft below river bottom (to El minus 23), and in which the intake was built under water.

Ten 24-in. and two 30-in. pipe-

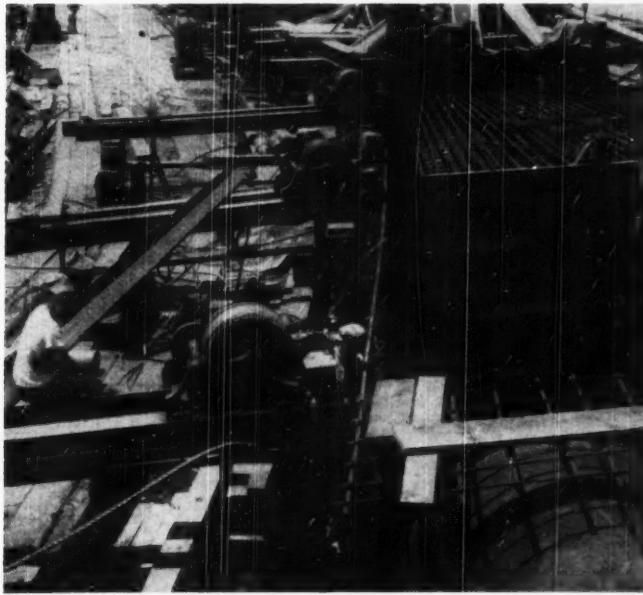
pile caissons were put down to support the intake. They were driven to rock and cleaned out, the rock was cut for a short distance, and the pipe was re-driven to seat it firmly. Then a socket was drilled 3 ft into the rock and a 53-lb H-section was concreted in to make a Drilled-In caisson.

With caissons completed, the cofferdam was excavated by clamshell, and its bottom blanketed with an 18-in. leveling course of crushed stone. Then the intake was assembled directly above final position in four 40- and two 50-ft lengths. Construction started at the off-shore end and proceeded landward. Transverse frames or cradles near the ends of each intake section (plus an additional one at the center of the long sections) supported the units, and were in turn held by brackets welded to the cofferdam sheeting. The four pipes of the intake were accurate-



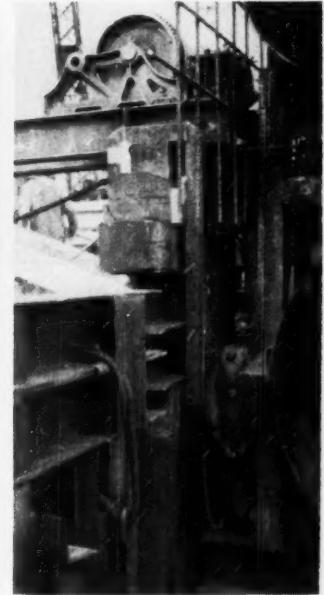
**INTAKE ASSEMBLY** is readied for lowering. This is 50-ft inshore unit where pipes spread to enter pumpwell. Warming line is at right above suction lines. Transverse bulkhead will confine tremie

concrete encasement pour, which will continue up inside longitudinal wood forms around warming line. Note slotted connection angles at pipe ends for underwater bolted connection.



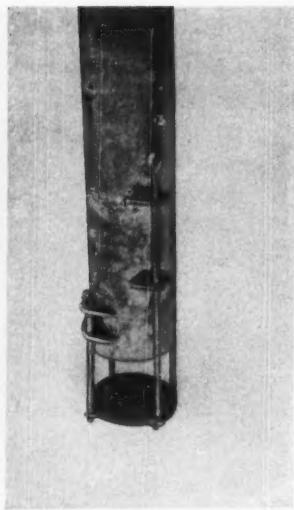
**HAND WINCHES** on long frames anchored back to work trestle lower the assembly to place in flooded cofferdam. Hoists are hooked to assembly cradles with 5-sheave blocks and 9-part line for safe control of 96-ton unit. Three winches on each side handle

50-ft assemblies; two per side are enough for the 40's. Note projecting butt strap on upper half of pipe at right, that will lap over previously placed pipe (with similar strap around its lower half) to insure tight joint.

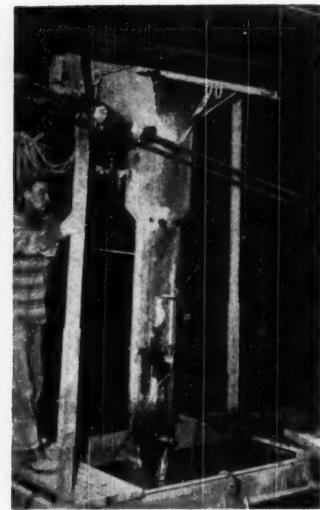




LOWERED UNITS are suspended by cables and turnbuckles, and blocked down by angles to prevent rise.



TREMIE PIPE foot gate (above) is cabled to automobile-bumper hydraulic jack (right) at top of pipe, where air inlet and internal flap valve are located. Setup makes start of pour wash-free.



CONCRETE IS TREMIED to encase lowered pipes and make integral structure with supporting caissons. Concrete hopper and tremies are supported by trussed beams spanning cofferdam. Pumpcrete and trucks deliver mix.

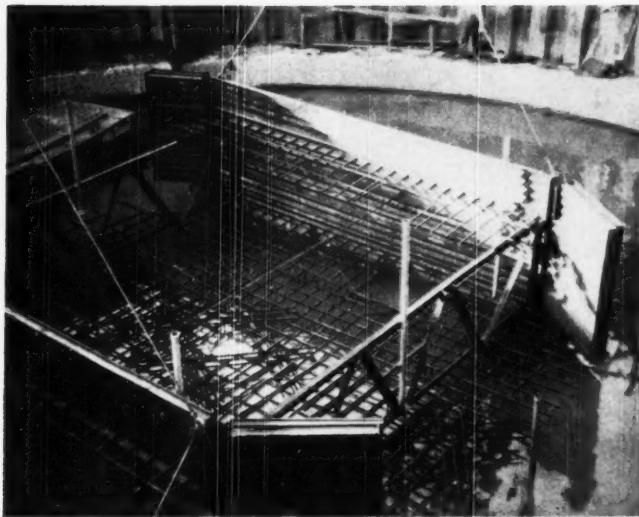
ly positioned in each set of cradles, and the required reinforcing steel for their concrete encasement was placed and welded. A transverse bulkhead of 10-gage horizontally corrugated sheeting was built into one end of each section. This, along with the cofferdam sheet piles and the bulkhead in the previous section, acted as a form to confine the tremie concrete envelope. The corrugations made an excellent key between pours.

Pipes on adjacent units had to be in alignment and their joints tight, so the next section was as-

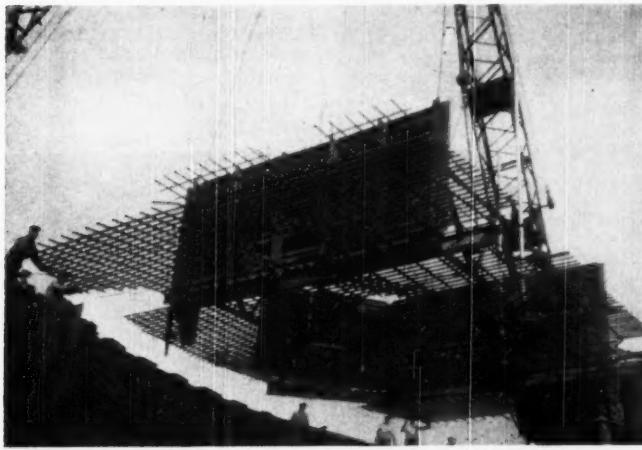
sembled complete before the first was lowered. Pairs of semicircular butt straps of 12x1/2-in. steel plate extending beyond the pipe ends assured closure. A bottom semicircle was welded to each pipe in the assembly to be lowered first, and the succeeding pipe length cradled in it for position. Top semicircles were then welded to these latter pipes. Divers bolted together top and bottom strap halves after the intake assemblies were lowered separately.

Assembled units weighed up to 96 tons, and were lowered by hand

winches at the supporting cradles. The winches were built into long steel frames that rested on top of the sheet piles as a fulcrum: the rear of the frame was tied down to the trestle; the front cantilevered into the cofferdam. The winches held the intake section through two 5-sheave blocks and nine parts of line. First they raised it slightly for removal of the brackets that supported it during assembly, then they lowered it until one end rested in the butt straps of the previously placed section. The other end was kept 3 or 4 in.



PUMPWELL COFFERDAM TREMIE SEAL is reinforced with preassembled mat. Horizontally corrugated bulkhead forms divide pour into thirds. Note reinforced concrete ring wale that braces 97-ft-dia cofferdam.



MAT AND FORMS for edge section of center-third tremie seal pour in pumpwell are swung to place. Divers will open hinged bulkhead ends.

high, and its load transferred from the winches to heavy cables and turnbuckles fastened to the cofferdam sheeting. Then winches and their frames were removed to clear the trestle deck. In a day or two, when the weight of the lowered section had taken all the stretch out of the supporting rigging, the unit was adjusted to correct elevation by turnbuckle. To prevent the section from rising during concreting, long vertical angles socketed in the cradle were blocked to the sheet piles, and divers joined the pipes' butt straps.

A tremie concrete envelope  $12\frac{1}{2}$  ft thick encased the pipes, but was not poured until the following adjacent section was positioned. H-section cores from the supporting Drilled-In caissons extended 2 ft into the concrete to make a unified structure.

Concreting in a 40-ft intake section was mainly by two 10-in. tremie pipes 10 ft in from the unit's shore end. Concrete was a rich 7-bag mix with 6-in. slump, which flowed well and reached a second pair of tremies 20 ft farther back. The first pair of pipes placed 75%

of the concrete; the second set merely leveled up the pour at the opposite end. In the 50-ft sections, three pairs of tremies were used, again with most of the pour from one set of pipes, and the other two for topping-out.

Concrete was supplied by truck mixers to a Pumpcrete machine that delivered to a hopper over the pour. Chutes from the hopper directed concrete to the desired tremie pipes, which were raised and lowered by air winch to control their flow.

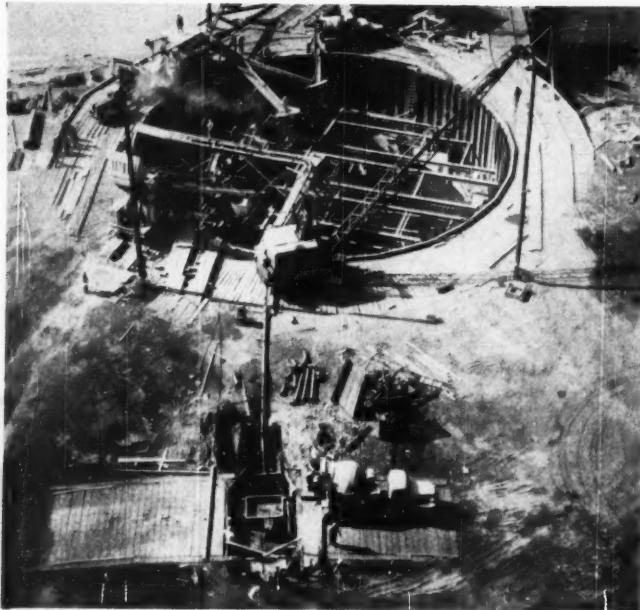
An ingenious gate started tremie flow without washing. A flat plate with rubber gasket was pulled tight against the bottom of the pipe by cables and small hydraulic jacks at the top of the tremie. The pipe top was fitted with an internal down-dropping flap valve with a compressed air inlet below it. Thus, it was possible to blow the water out with air, close the bottom valve, fill the pipe with concrete, release the jacks, and raise the pipe to start controlled concrete flow. And the tremie could be moved, without danger of losing its charge, by jacking the bottom valve closed to hold concrete in the pipe.

Connection of the last intake assembly to the pumpwell, some 12 ft, was made in individual units. A bottom reinforcing mat was lowered, then the three suction lines were set separately. Top reinforcing was placed as a unit, followed by the warming line. Tremie concrete made the connection complete.

### Novel Pumpwell Cofferdam

Construction of the pumpwell went apace with the intake. It was built within a dewatered 97-ft circular sheet-pile cofferdam that was braced by only two concrete ring wales. The heavily reinforced rings held it against a 53-ft differential head. The complete absence of cofferdam cross-bracing made it possible to: (1) Excavate the cofferdam with a dredge floating inside; (2) place pre-assembled reinforcing for an 8-ft tremie concrete seal; and (3) form-up the pumpwell without interference.

The wales were centered at El 6 and El minus 8 (24 and 38 ft below top of sheeting; 38 and 24 ft above bottom of tremie seal). They were supported at ten points by H-piles driven to rock, and were formed and poured in the dry as cofferdam excavation

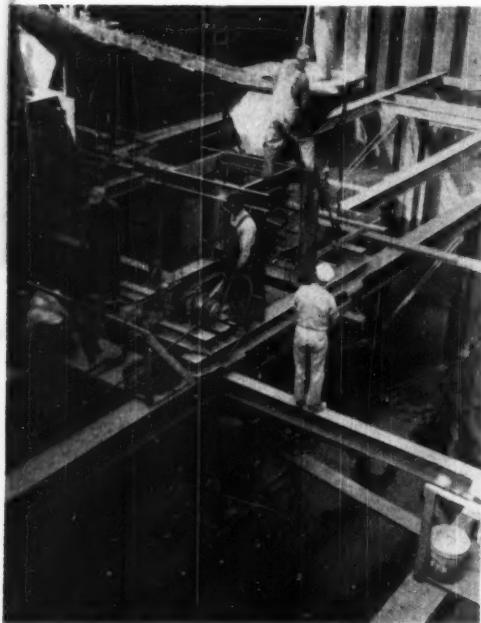


TREMIE SEAL IS CONCRETED with mix supplied by two pavers and fleet of truck mixers. Trucks dump direct to chutes to tremie pipes, or to Pumpcrete machine in pit. Varied methods of mixing and delivery uninterrupted underwater pour.

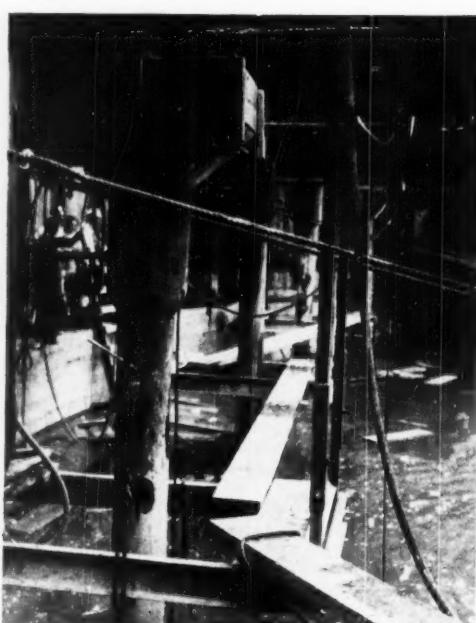
reached their levels. Then, to preclude a blow, the cofferdam was filled with sand to top wale level. Twenty 30-in. Drilled-In caissons were driven, and cofferdam excavation completed by floating dredge. Reinforcing for the 2,300-cu yd tremie seal was assembled and lowered, with bulkhead forms attached to divide the pour into thirds, and concrete was tremied much like that for the intake. Obstruction-free construction of the pumpwell followed, after cofferdam unwatering.

Intake and pumpwell were built by Western Foundation Corp. and Spencer, White & Prentis Inc., New York, as joint venturers. Their affiliate, Drilled-In Caisson Corp., installed the caissons. The writer was field engineer for the contractors, and took over direction of the work after the death of Harry Larson, superintendent. Merrill Strong then became field engineer.

Stone & Webster Engineering Corp. designed the entire Venice power plant and had charge of all construction. G. H. Hill was in charge of field work, Albert Smith was resident, and Jay Shank was supervisor on the work described.



TREMIE ASSEMBLY, for pouring pumpwell cofferdam seal, rides on pair of steel beams resting on seats welded to sheet piles. Beams are trussed with cables to vertical strut at center. Tremie is skidded along, as pour face advances, by line to winch head on air tugger hoist. Cable from tugger's drum . . .



. . . RAISES AND LOWERS tremie pipe to control concrete flow, passing around small sheaves at each corner of integral hopper at top of pipe. Main hopper on assembly above pipe feeds mix through elephant trunks. Neat tremie setup and valved pipes [like those for intake pour] netted 115 yd per hr.

# New low-priced grader features tandem drive on TIMKEN® bearings!

THE new Allis-Chalmers model "D" motor grader is a low-priced machine with several big-ger features.

One of these is the tandem rear-wheel drive that gives greater driving power for bigger loads. This drive is mounted on Timken® tapered roller bearings to insure smooth, trouble-free operation, minimum maintenance and long life.

Because Timken bearings have a tapered design, they take radial

loads, thrust loads, and combinations of both. Line contact between rolls and races gives them extra load capacity. They're made of special analysis Timken alloy steel—case hardened for extra toughness inside and extra hardness outside.

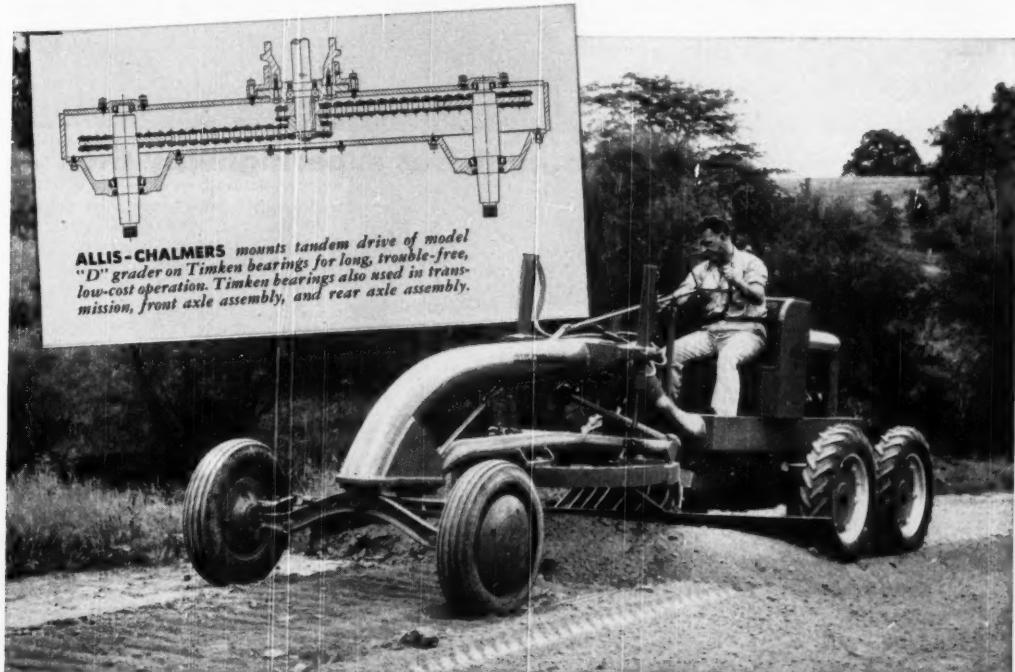
Timken bearings hold shafts in rigid alignment and maintain original precision. They reduce wear on adjacent parts and minimize friction. They permit tighter closures that keep the dirt out—lubri-

cant in. They reduce maintenance and normally last the life of the machine.

It pays to make sure the machines you build or buy are Timken bearing equipped. Always look for the trade-mark "Timken" on the bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".



*This symbol on a product means its bearings are the best.*



#### POSITIVE ROLLER ALIGNMENT

Wide area contact between roll ends and rib of the cone prevent Timken rollers from skewing. Result: bearings roll easier, last longer.

The Timken Company is the acknowledged leader in: 1. advanced design; 2. precision manufacture; 3. rigid quality control; 4. special analysis steels.

**TIMKEN**  
TRADE MARK REG. U. S. PAT. OFF.  
**TAPERED ROLLER BEARINGS**

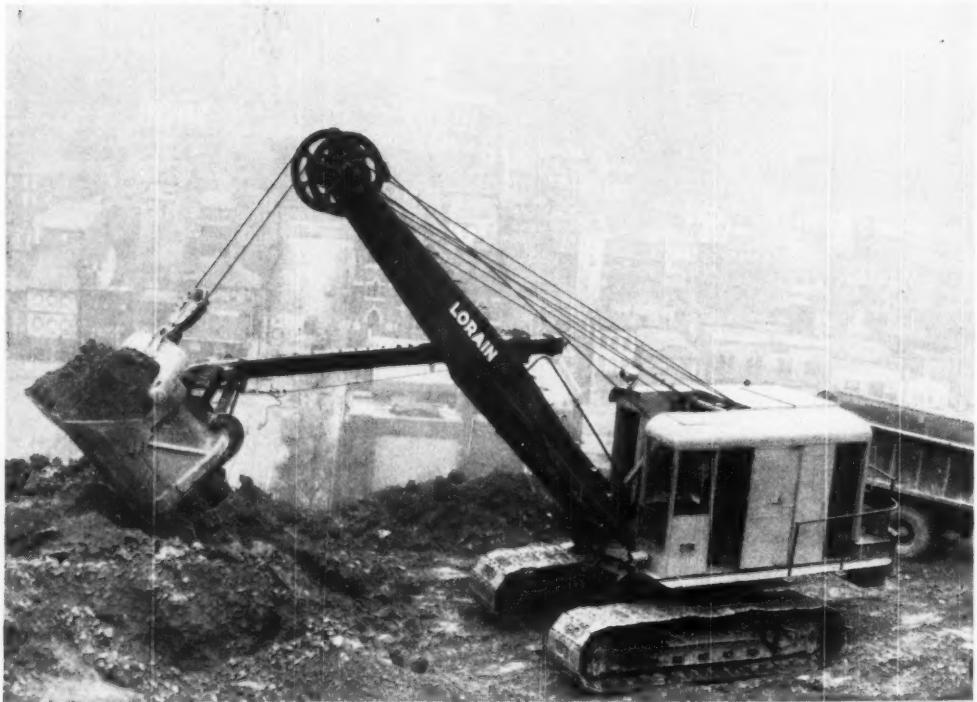


NOT JUST A BALL • NOT JUST A ROLLER • THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST • LOADS OR ANY COMBINATION





**On deep slash cut for mountainous superhighway the . . .**



**Shovels Hang High in Pittsburgh**

**TOUGH GOING!** Here's the type of mountainside confronting contractor when he started job of all sidehill cut excavation. Somehow shovels and haul roads had to be carried to top, only access being from below. No wonder some haul roads run to 18% grades.—Photo, Constructors Association of Western Pennsylvania

**HANGING PRECARIOUSLY** on the side of steep mountain slopes a fleet of nine Lorain shovels is slashing out deep sidehill cuts on Harrison Construction Company's million-yard one-mile superhighway project on Pittsburgh's south side. The job is a four-lane highway known as West End By-Pass to South Hills on Route 247, connecting the south end of the West End Bridge over the Ohio with Sawmill Run at Banksville Circle.

Excavation, running about 1,250,000 cu yd, and mostly rock at that, is all sidehill cuts up to 240 ft deep. As only 48,000 cu yd is required for embankment, practically all spoil must be wasted—and that means hauls up to 2 mi in this mountain-rimmed congested area. An added hazard is the busy P.&W.V. railroad tracks along the toe of slope that must be kept clear of falling rocks.

Getting the shovels into working position and establishing haul roads are the most difficult parts of the job. Access from on top to tops of cuts was impossible, so shovels and trucks have to be worked up from below. In most cases the shovels follow and build—as they go up the mountain—

(Continued on page 62)



**DIFFICULT TASK** of getting shovels and haul roads to top of cuts over steep mountainside is best shown by this air view, covering about half of job. Only access to cuts is from below, so all spoil must be trucked down steep ramps for haul over congested streets at left.—Photo by Bill Herman, Pittsburgh Sun-Telegraph



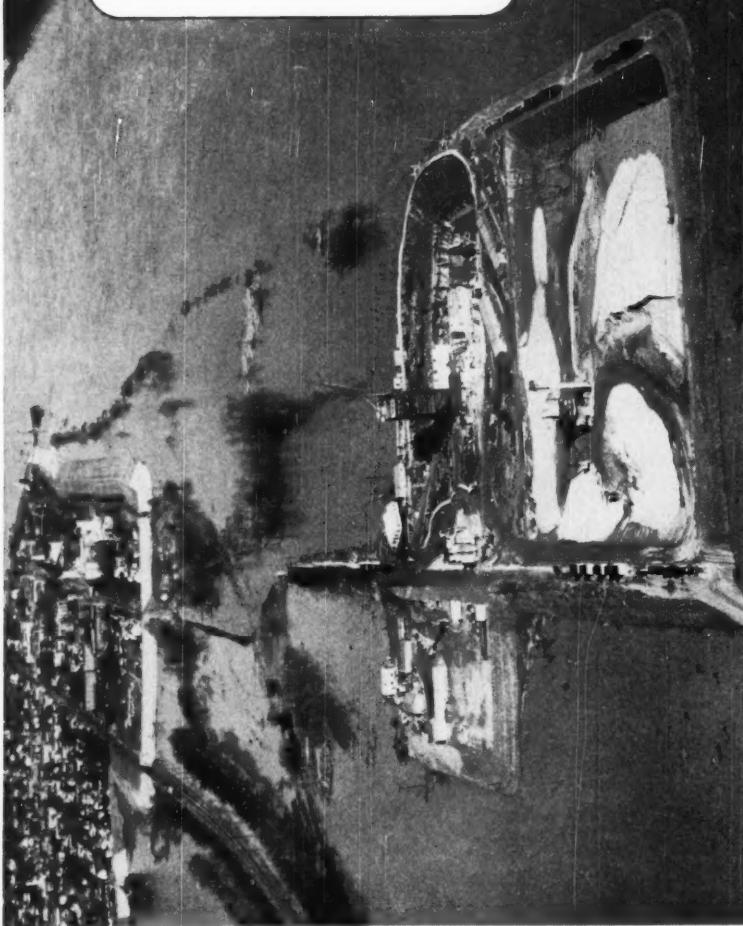
**AFTER BENCHES** are established, excavation settles down to routine shovel and truck operations. Keeping benches wide enough for turning trucks then becomes principal concern. Care must be

taken not to spill spoil over bank, for there is a busy railroad track below at this point.—Photo, Constructors Association of Western Pennsylvania.

## WHAT A PICTURE!

It shows at a glance how effectively a **MORETRENCH WELLPOINT SYSTEM** is keeping 40 feet of water under control on this deep excavation — with the river outside looking in!

The solution to your pumping problem is as near as your phone. Contact any one of our offices.



Tanner's Creek Power Plant, Lawrenceburg, Indiana. Owner: Indiana and Michigan Electric Co. Engineers: American Gas and Electric Service Corp., New York

## MORETRENCH CORPORATION

4900 S. AUSTIN AVENUE  
CHICAGO 38, ILLINOIS  
90 WEST STREET  
NEW YORK 6

315 W. 25th STREET  
HOUSTON 8, TEXAS  
7701 INTERBAY BLVD.  
TAMPA 9, FLORIDA

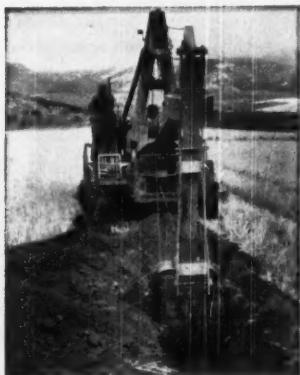
ROCKAWAY  
NEW JERSEY

**IMMEDIATE DELIVERY!**



# Hystaway Hoe Front

**For use with Hystaways mounted on "Caterpillar"  
D8, D7 and D6 track-type tractors**



Ditch digging is fast and efficient with the Hystaway Hoe. A narrow trenching bucket (23-in. cutting width) is available as optional equipment. Standard  $\frac{1}{2}$  yd. bucket is 33 in. wide.

**A HIGH SPEED**, rugged NEW EARTH MOVING TOOL for ditch and trench digging and basement excavating. DOES ANY JOB that a CONVENTIONAL  $\frac{1}{2}$  cubic yard hoe can do.

The Hystaway Hoe will dig to a full 15 ft. depth. It has MORE REACH than a conventional back hoe—an EXTREMELY FAST SWING—an actual EXCESS OF POWER because of the "Caterpillar" diesel tractor engine which, even on the D6, has more horsepower than the engine on the average  $\frac{1}{2}$  yd. excavator.

The Hystaway, mounted on a "Caterpillar" D8, D7 or D6 track-type tractor with bulldozer, now provides five tools—dragline, clamshell, crane, shovel and the BACK HOE—and full tractor MOBILITY AND MANEUVERABILITY are retained. Current delivery. See your "Caterpillar" distributor.

**HYSTER COMPANY**

2921 N. E. Clackamas . . . Portland 8, Oregon

1821 North Adams Street . . . Peoria 1, Illinois





OVERSIZE ROCKS are busted up with skullcracker rig for loading with 2½-yd Lorain shovels. Slide-stopping berm at this level gives wide working space for equipment, not found on most levels.—Photo, Constructors Assn. of Western Pa.

(Continued from page 59)  
planned haul roads for the trucks. Access roads run as steep as 18%.

Material to be excavated is unpredictable and varies from clays through sandstones, limestones, slates and shales. As much of it has to be drilled and shot, the excavation procedure is laid out in 12-ft benches to follow the drilling and shooting program. At the start of a cut, of course, the first job is to swamp out working space for shovel and trucks. Then the

excavation proceeds downward in 12-ft lifts. Slopes, ranging from ½:1 to 2:1, are kept trimmed.

Drilling is by Ingersoll-Rand and Gardner-Denver wagon drills with 12-ft steel. Where possible, a fleet of portable compressors is kept close to the wagon drills, but occasionally air must be piped up the mountainside from compressors at the bottom. Shooting is with Atlas 40% gelatin, fired by Rockmaster milli-second delays. To keep flyrock to a minimum and

to cause near-by residents as little annoyance as possible, firing rounds are loaded to less than 100 lb per delay for each of the seven delays in the Rockmaster system.

Harrison decided to sublet all hauling and disposal to local truckers, giving them the responsibility of finding disposal areas and of fighting heavy traffic on city streets. As many as 65 trucks have been kept busy at one time. New Autocars with 11-yd rock bodies are included in the truck fleet.

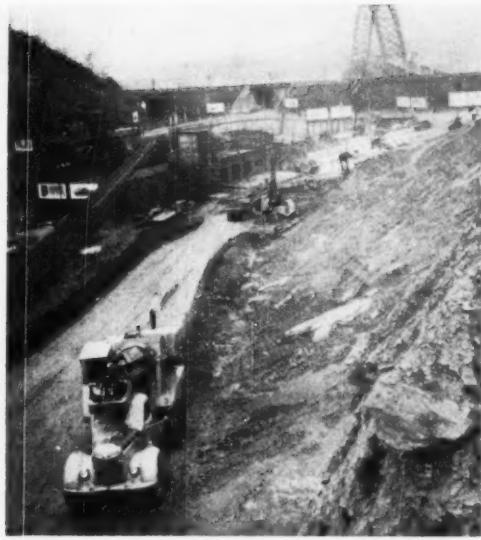


ROCK DRILLING is in 12-ft benches with wagon drills. Holes are loaded with Atlas 40% gelatin for firing with Rockmaster fast delays. Powder charge is kept under 100 lb per delay to

minimize flyrock and annoyance to residents. Where possible, the I-R portable compressors assigned to this crew are located on bench near drills.—Photo, Constructors Assn. of Western Pa.



JACKHAMMER DRILLING is sometimes necessary for trimming rocky slopes. G-D compressor at bottom of slope furnishes air.



EXCAVATION nears roadway level at west end where superhighway ties into approaches to West End Bridge across Ohio River.

Shovels and trucks work two shifts per day, turning out an average of 12,000 yd per double shift.

Besides excavation, Harrison's \$3,000,000 contract with the Pennsylvania Department of Highways calls for 26,000 sq yd of 10-in. paving in two 24-ft lanes, relocation of many utilities, 5,400 cu yd of concrete in structures, 1,000,000 lb of steel and 6,000 ft of foundation piling. Besides two bridges, structures include retaining walls at bottom of some slopes.

Work started last November, and the contractor has 175 working days, exclusive of time lost by bad weather, to complete the job. D. B. Boyers is resident engineer for the State Department of Highways.

For Harrison Construction Co., general contractor on the project, J. P. Frazier is chief engineer, H. R. Moore is assistant chief, N. T. Franklin is general superintendent, Walter E. Yoakum is project superintendent, and Harris Shephard is project engineer.



CAREFUL PLANNING of excavation operations is necessary to keep shovel outfits from fouling one another. Here three rigs are stretched out for working at three different levels. Dozers and graders maintain haul roads, aid in cleanup.



INEVITABLE RELOCATION of utilities is big job, topped only by general excavation. Here hoe and tractor-shovel work on sewer.

Know how to  
cut concrete  
placing costs?

call on

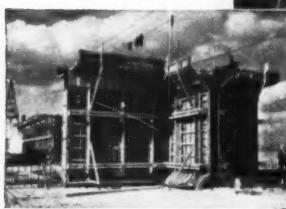
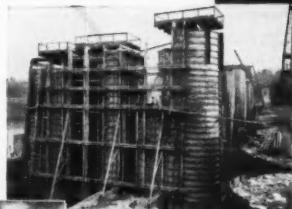
**BLAW-KNOX**

Engineering "KNOW HOW"

plus

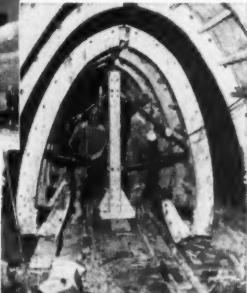
**Blaw-Knox Steel Forms**

Blaw-Knox Steel Forms handle a wide variety of jobs. Here Blaw-Knox Pier Forms are used during construction of the Emsworth Locks at Pittsburgh, Pa.



Above, Sewage disposal plant for Chicago's southwest side was constructed with Blaw-Knox Steel Forms.

At right, Blaw-Knox telescopic Steel Forms set to pour 96° sewer at Fort Wayne, Ind.



Blaw-Knox Steel Forms in place for a tunnel arch pour on the Boysen Dam railroad relocation tunnel. Two 75-ft. pours per week were completed with each of the two sets of forms.

WHATEVER your concreting problems, you'll get the job done faster and well within your estimate when you combine the time saving efficiency of Blaw-Knox Steel Forms with the money-saving recommendations of Blaw-Knox engineering service. This consultation service is available to any contractor, from the blueprint stage to the final pour. Blaw-Knox engineers help you select the forms just right for the job, work with you in planning for simplified forming methods that often reduce the number of operations necessary, speed the job, and keep costs at minimum levels. The experience gained over 40 years by the original and most prominent manufacturer of Steel Forms for heavy construction is at your service. Write today for advice and information on your concreting problems. Ask for Bulletin 2035.

# BLAW-KNOX

BLAW-KNOX DIVISION OF BLAW-KNOX CO., Farmers Bank Bldg., Pittsburgh 22, Pa.  
New York • Chicago • Philadelphia • Birmingham • Washington



# 4 Crawlers for the LORAIN-50

SELECT FROM THESE 4 CRAWLERS  
TO BEST FIT YOUR  
TRAVEL AND DIGGING CONDITIONS



For jobs requiring greater clearance between treads, Lorain presents a new 13 ft. wide mounting — for hoe, crane, clamshell, dragline, or shovel work. Provides increased crane lifting capacities, too. Ideally suited for cross-country pipe line construction and other jobs where ditches must be straddled!

► The Lorain-50 Series now offers another exclusive performance advantage in the 1-yard class! You may *select* just the size and type of Crawler best suited to your work, ground or travel conditions. For instance, the 14-foot-long crawler is ideal for dragline, clamshell or crane service — it reduces ground pressure, improves soft ground flotation, eliminates "nosing-in". Get the full story on all of the advantages of the Lorain-50 — today!

The Thew Shovel Co., Lorain, Ohio



THE LORAIN-50 IS THE  
ONLY MACHINE IN THE  
ONE-YARD CLASS WITH  
HYDRAULIC COUPLING  
AS STANDARD



THE MACHINE  
OF THE YEAR

# THEW LORAIN®

SHOVELS • CRANES • CLAMSHELLS • DRAGLINES  
HOES • MOTO-CRANES

For Facts About the "50" See Your LORAIN Distributor

# CAMPBELL'S CORNER A Monthly Equipment Maintenance Feature

By HOMER C. CAMPBELL, Service Manager, H. W. Moore Equipment Co., Denver, Colo.

## Preventive Maintenance Pays Off

### ...But It Should Start With Machine Design

IN AN EDITORIAL in the February 1950 CONSTRUCTION METHODS AND EQUIPMENT, Rich asks a very pertinent question: "Where is all that wonderful post-war equipment we have been promised?"

We of the distribution and service end of the equipment business are interested in the answer to that question, too. First, of course, our interest is selfish—new equipment means more sales and more business, with resulting better conditions for yours truly. However, we are also interested in new things to come from the standpoint of preventive maintenance, a lot of which could be built into the machine.

Maintenance is very important to the customer or user, because all time required for maintenance and service is lost time to the job. While down time for maintenance and service has been reduced over the years by manufacturers, we think that much more can be done, especially with one-shot lubrication, for example.

#### Lube Time Excessive

In looking over an old operator's manual issued in 1919, we note a very comprehensive dissertation on Care and Operation of a Tractor. Nowhere in this manual do the words "Prevention" or "Maintenance" appear. Yet note instructions on "How and When to Oil the Tractor." Oiling instructions are: Once every hour—2 items; once every two hours—12 items; twice a day—12 items; once a day—1 item. These do not include attention to the mechanical lubricator and other miscellaneous items.

Thus it appears that the old-time tractor operator might not have moved so much dirt, but he must have been one helluva good grease monkey. Let's look at a modern operating manual for a 100-hp tractor. This manual is very complete,

and outlines an excellent preventive maintenance program that anyone can fit to his job. In great detail it covers "Care and Operation" of the tractor—known better today as Preventive Maintenance. Yet for even once-a-day service and inspection procedure there are 35 points to be checked and lubricated.

Now it takes even a good man at least one hour or more to check 35 lubrication points. Any small tractor or dozer is worth 7 bucks an hour to the owner; larger machines are worth proportionately more. Here the down time for lubrication costs the owner a minimum of \$7 per hr, plus the expense of the grease monkey.

#### Follow Factory Example

To get back to Rich's "Challenge to Leadership" editorial. Were we to visit most any manufacturer's plant we would be shown a lot of fancy fully- and semi-automatic machines used in making construction equipment, most of them fitted with highly simplified lubrication and servicing systems. Why not include some such system in the products they make? We believe the Editor hit the nail on the head

in calling for manufacturers to take the lead in developing new and improved equipment. The construction industry needs it.

We, as distributors, are interested in a good preventive maintenance program by the users of equipment we sell and service. And we need selling information just as surely as does the salesman. For sure, the prospective purchasers of new equipment, as well as the owners of present equipment, are definitely getting more Preventive Maintenance minded. And the equipment that lends itself to simplified inspection and service from a preventive maintenance and lubrication standpoint is the equipment these important people are going to put their dough into. Because, as you and I know, they live, breathe and dream of high estimates, good dirt and no down time. The manufacturer can do a lot to assist on the no down time. We are heading for a pushbutton era and nothing can stop us, so we in industry sure want to see some push buttons.

A Preventive Maintenance program on paper in an Operator's Manual is sure swell, it looks good and it reads good. But to get such a program in action and with the



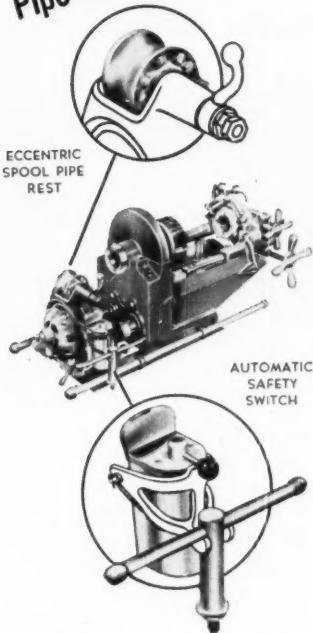
ONE-SHOT LUBRICATION is one preventive maintenance aid that might be built into the machine by the manufacturer.

*Now Better than Ever*

# BEAVER

## Model-A

### Pipe and Bolt Machine



*Safe! Smoother!*

Two new improvements—patents pending—have been added to further increase the safety, convenience and performance of the Beaver Model-A 1½" to 2" Pipe & Bolt Machine—popular the world over for the past 19 years.

1. The new Automatic Switch Lock and Chuck Wrench holder makes it impossible to start the machine without removing the chuck wrench. This protects both workmen from injury and machine from damage. A highly important Safety Feature.

2. The new Eccentric Spool Pipe Centering Device, designed from the rotating spindle, prevents the whip of long revolving lengths of pipe from rocking the spindle and causing flat-sided, leaky threads.

And don't forget—there are 192 different kinds and sizes of dies available, in stock, for your every requirement when you buy a Beaver Model-A. This die inventory represents an investment of more than \$150,000—to insure immediate user service. Sold by leading jobbers—

Write today for new Beaver Catalog No. 50. Address Beaver Pipe Tools, Inc., 228-300 Dana Avenue, Warren, Ohio, U.S.A.

50 Years of Friendly Service

**BEAVER**  
PIPE TOOLS

proper follow-through is a problem, and it definitely takes some serious instructions from the top of the organization. We know of large operators who have used the program for years, and believe it or not, they are successful operators—some are operating on an international scale. Therefore, if we can show the ultimate consumer that it does pay, and if the manufacturers can show us where they can assist, by proper and modern design, in cutting the present time required for lubrication and preventive maintenance, then the user will go for a maintenance program. He likes money; and less down time is money for him.

#### Up Productive Time

The answer as to why so much interest in Preventive Maintenance all at once, we believe, lies in the beginning of this article. As you have readily noted, the "man-behind-the-gun" spent most of the day "oiling" the tractor. Today's equipment is high speed; it is made to move dirt and to move it fast. Costs of operation are high, and probably will remain so. Therefore, to get a fair return on your equipment and "time" investment, that equipment and time must be productive. And to keep it productive means keeping it on the job. A good preventive maintenance program will do that. Hence, the more simplified the maintenance requirements of the equipment being used, the more productive it will be.

We'll have more to say about Preventive Maintenance in an article in the **CONSTRUCTION METHODS AND EQUIPMENT** special maintenance issue in July.

#### Equipment Rental Schedule Revised by AED

THE FIFTH EDITION of the "Compilation of Rental Rates for Construction Equipment" is now available from the Associated Equipment Distributors, 360 North Michigan Ave., Chicago 1, Ill., at \$3.00 per copy. The compilation may be purchased by any interested person.

Monthly, weekly and daily rental rates of 266 major items of construction equipment are included in the booklet. Published rates are the averages of rentals charged by distributors throughout the country. Thus, the rates shown may

**Powerful • Versatile**  
**USTRAC**



#### CHECK THESE FEATURES

##### ✓ LOWEST PRICE EVER . . .

USTRAC is now priced lower than ever before. Pound for pound and—inch for inch it is the best tractor buy on the market.

##### ✓ MANEUVERABLE . . .

Ruggedly constructed—designed for heavy-duty work. Only 37-inches wide, USTRAC is perfect for confined areas.

##### ✓ FOUR SPEEDS-INSTANT REVERSE

USTRAC has four forward and reverse speeds instantly selected by lever eliminating unnecessary stopping. Exclusive USTRAC feature.

##### ✓ INEXPENSIVE TO OPERATE . . .

Owners report fuel consumption of dependable Continental engine under \$1.50 per day.

##### ✓ EQUIPMENT . . .

Finger-tip hydraulically controlled front end loader with bucket capacity of ½ cubic yard, angle dozers, bull dozers, etc., available with quick, easy one-man attachments. Easily works 14" three-bottom plow.

##### CLARK PARTS AVAILABLE . . .

The Clark Airborne—the tractor used by Seabees and Army engineers during the war—was the forerunner of the USTRAC. Many parts are interchangeable. If you need Clark parts check with The Federal Machine & Welder Company, Warren, Ohio.

ASK TO SEE COLOR FILM OF USTRAC IN ACTION!

#### SOME DEALERSHIPS STILL OPEN!



THE FEDERAL MACHINE & WELDER COMPANY  
DEPT. 300  
WARREN, OHIO

I AM INTERESTED IN USTRAC. PLEASE SEND ME  
COMPLETE INFORMATION.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**TAKE THE  
OUT OF LOADING WITH  
AN *Athey*  
FORCE-FEED  
LOADER**

For stockpile loading, there's no ramming, just a steady push into the pile, with the Athey Force-feed Loader, equipped with the low-speed axle.



An Athey Force-Feed Loader, equipped with the new, heavy-duty, low-speed axle, can take the task out of your loading, just as over 1,000 others have done for their owners.

The low-speed axle provides the all-round answer for all-round loading problems with these advantages. Loading speeds from .27 to 1.73 m.p.h. fit the loader to better stockpile-loading and greater production. Power is tied to traction, with the use of larger, single rear tires . . . every one of the "horses" in the heavy-duty industrial engine is put to use. The use of larger tires, with the heavy-duty axle, also increases flotation and allows the loader's use in any material. The greater torque capacity of the low-speed axle reduces the stress and strain of tough jobs and so prolongs the work-life of the loader. High travel speeds reduce travel time between job-sites. These advantages pay off wherever greater production, better traction and improved flotation are first needs.

The high production, low cost and long life of the Athey Force-Feed Loader can and will take the load out of loading . . . and save you dollars on every job. Replace outmoded methods with a modern Athey Force-Feed Loader — today! See your Athey—"Caterpillar" Dealer!

**ATHey PRODUCTS CORPORATION**  
5631 W. 65th St., Chicago, Illinois



The Athey ML4 MobiLoader is another loading cost-cutter. The bucket loads with traction-backed crowding, lifts overhead on arms pivoted at the right place to absorb shock and stress, dumps to the rear — all in a "straight-line".

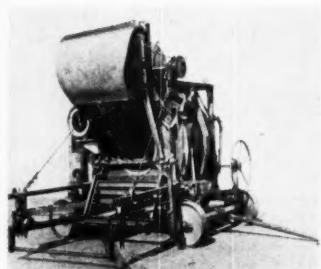


**Athey**  
FORCE-FEED LOADER

vary from actual rates charged in any single locality.

The Association warns, however, that the compilation is published for information only, and is not intended to suggest or to influence rates or conditions of rental.

**Mixer Weighs  
Its Own Batches**



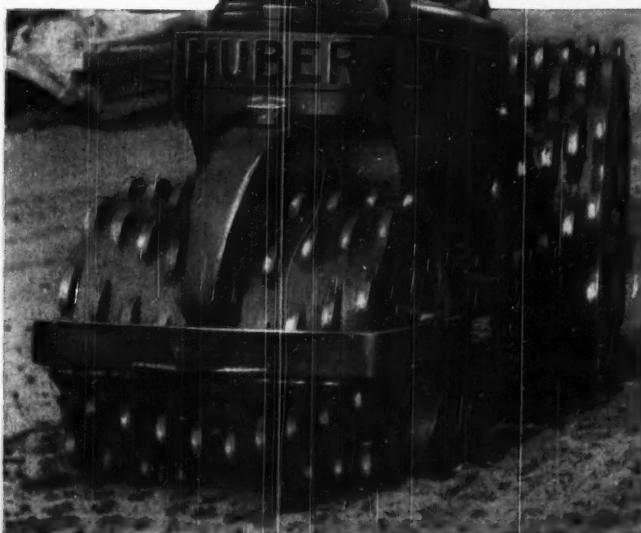
NO MORE GUESSWORK or pre-weighing of materials when using the new Rapier NT mixer manufactured by Ransomes & Rapier, Ltd., Ipswich, England. The company makes optional installation of the scale and batch - weighing frame on which the skip rests after dumping into the tub. Safety bar prevents movement after maximum scale mark has been reached and entire frame is collapsible for traveling.

**Metered Mail Won't Save You . . .  
... If Bids Arrive Late**

WARNING! A new instruction is appearing in General Provisions of U. S. Corps of Engineers specifications. The Engineers warn they will not consider mailed bids received after official closing time, delayed by mail delivery, if such bids carry a metered mail post-mark, regardless of mailing date shown on the meter stamp. Therefore, they suggest, bids bearing metered stamps should be mailed in plenty of time to reach the designated office prior to the bid-opening hour, making due allowance for possible delays in the mail. We've got a better suggestion. Why not spend a few cents for some real stamps and let the official post-office cancellation be evidence of your mailing date?

*NEW!*

# HUBER COMPACTION ROLLER...



- **COMPACTION: 5387 LBS. PER LINEAL INCH**
- **118 H. P. DIESEL ENGINE**
- **CONVERTIBLE TO STANDARD ROLLER**
- **SPEEDS FROM 1½ TO 5 M.P.H. IN EITHER DIRECTION**
- **COMPACTS 100-150 CU. YDS. AN HOUR AT AVERAGE SPEED**

● Here is a one-man, self-propelled unit designed to give higher compacting values than any other known commercial unit available for this purpose. With a set of standard rolls, it converts quickly and easily to a conventional 12 ton 3 wheel roller. It can become one of your busiest pieces of equipment. An independent roll-cleaning scraper is provided for each groove for positive depth of pattern. See your nearest HUBER Distributor today — or write to the factory for a copy of Bulletin H-140.

# HUBER

MANUFACTURING COMPANY  
MARION, OHIO, U.S.A. — Since 1863



MANUFACTURERS OF HUBER MAINTAINERS, GRADERS AND COMPLETE LINE OF ROLLERS



## Construction Labor Notes . . . By JIM CONNOLY

### Want Contractor-Union Teamwork?

#### -- Look at New York City's Formula

"THE SKYSCRAPER SKYLINE of New York City is a testimonial to the harmonious relationship and mutual understanding of each side's problems that has existed for many years between the Building Trades Employers' Association and the Building and Construction Trades Council, AFL." That's a statement made by Howard McSpedon, president of the latter organization and it sums up the enviable labor situation which has prevailed since the formation of the New York City's BTEA in 1903.

The employers' group has grown to contain more than 1,000 contractor members who, in turn, employ a large percentage of the 175,000 local AFL construction and building tradesmen. When you consider that a building contractor deals with 41 trade classifications and the regulations of 19 international unions, coupled with the constant flow of new techniques, materials, tools, and equipment, it's small wonder that situations arise which are ripe for jurisdictional dispute and the old question of which trade should do what.

#### Typical Problems

Let's take a couple of problems which are typical of those handled regularly in New York and see how they fare. The first comes in the form of a telephone call from a local builder to Peter W. Eller, Chairman of the Board of Governors of BTEA. It is one of the average of 15 or 20 calls each day on which he is able to decide because of his fingertip grasp of BTEA administration and past procedure. Mr. Eller is no newcomer to labor-management or the building industry. For many years he held responsible executive positions in the Thompson-Starrett Co., and was president of the company from 1943 to 1947. He was national referee for the Building and Construction Trades Department of the AFL from 1941 to 1944. He was then elected president of the BTEA for the next three consecutive years and again for 1948-49.

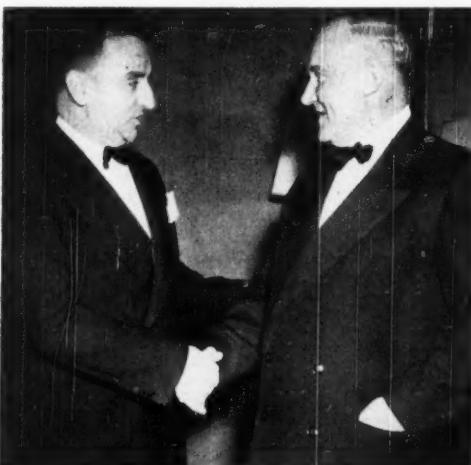
The phone call in question is prompted by the sheet-metal and iron workers stewards, who are in the job superintendent's office, both claiming work on metal skylights. After hearing of the type of frame and the job conditions, Mr. Eller decides that they

fit into a past ruling. That's that, and all hands accept his decision.

The next case is one which may not have arisen previously and the decision will be apt to set a precedent, so more care is exercised. Pipes, covered with tar paper, are to be installed in a building. Plumbers have been given the job by the contractor, but the asbestos workers have claimed the work because of the tar paper, which is one of their materials. A complaint is lodged with BTEA and the Building & Construction Trades Council, AFL. They are represented by a two-man board made up of Mr. Eller, Chairman of the Board of Governors of the BTEA, and Howard McSpedon, President of the AFL Trades Council.

Meanwhile—and this is very important—the work continues as started, right on through all the meetings and/or discussions. If stoppages were allowed until settlement was made, the back-up effect would hurt every follow-up trade and the entire New York City area construction program might come

(Continued on page 72)

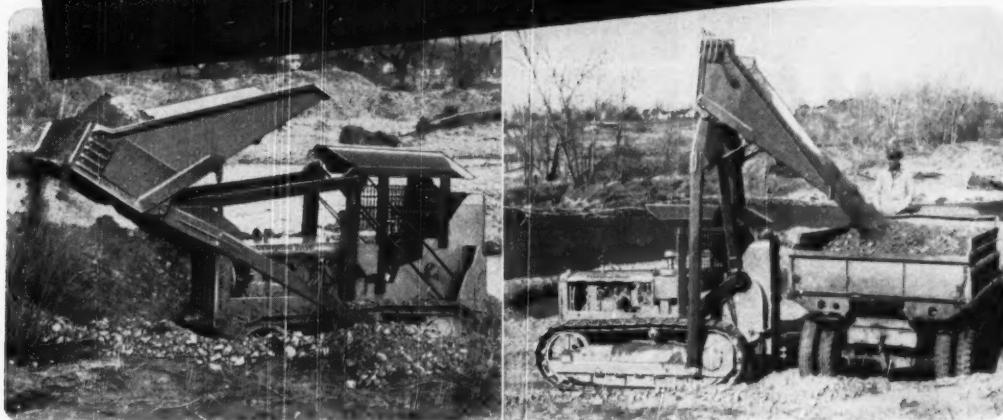


SYMBOLIC OF THE union-management harmony which exists in New York's building industry is this sincere handshake from Howard McSpedon, (left) president of the Building and Construction Trades Council AFL, to Peter W. Eller upon his election in 1949 as permanent chairman of the Board of Governors of Building Trades Employers' Association of New York City. The New York setup is a real triumph of American system of fair collective bargaining.

# Load 125 Yards Per Hour... with your Utility Size Tractor\*...

## AUSTIN 4-C OVERSHOT LOADER

\*The Austin 4-C Overshot Loader fits the Caterpillar D-4, International TD-9, and Allis Chalmers HD-5



At the time these pictures were taken, this operator was loading bank-run gravel at 125 yards per hour on a 50-minute hour with fuel consumption about the same as for normal dozing operations. The simple shuttle operation of the tractor and single lever control of the loader permit a 20-second loading cycle without swinging or blocking.

The power system is a Caterpillar Model 24 cable control unit driving a single cable through a wrap-around series of sheaves. This gives even tension at both sides, maximum power at the start of the loading cycle, and maximum speed for the balance of the cycle.

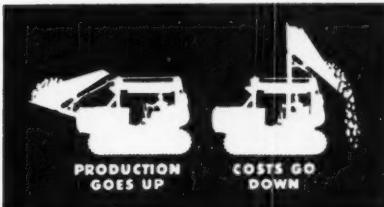
### Designed for Underground Mining or Surface Operations

For underground mining, the loader has an overall height of 12' with bucket raised, and a dumping clearance of 6'. The standard machine for surface operation has an overall height (bucket raised) of 15'-3", and dumping clearance of 8'. A height of 7'-8" with bucket lowered gives easy clearance at all underpasses during transportation, as does the 7'-6" overall width. Bucket capacity is 1 cu. yd., rated; weight is approximately 7,000 lbs.

### Does the Work of an \$18,000 Machine Only \$4,300 (Plus tractor)

The Austin 4-C Overshot Loader handles stock pile and loose bank material at lower cost than you've ever known and saves your expensive equipment for other duty. F.O.B. Factory price of the loader is \$4,300.00, subject to change without notice. Make your tractor a one-man machine for loading, cleaning, sweeping and excavating. It has a place in any operation.

OTHER MODELS—1½, 2½, and 3½ yds. rated capacity ••• ASK FOR FOLDER



MANUFACTURED BY

**John Austin, Inc.**  
D E N V E R , C O L O R A D O

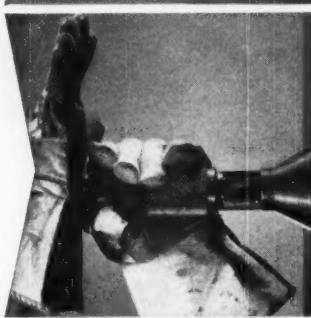
# READY!

Takes less than 30 seconds to prepare RAMSET Tool with power charge and choice of 65 coated steel fasteners.



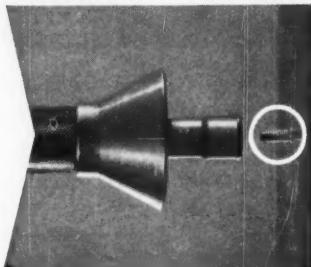
# RAM!

Place light, compact tool against work, locating fastening point as accurately as desired. Then tap lightly and the fastener is . . .



# SET!

Instantly, tightly, cleanly, easily. No drilling, chipping or plugging. Less than a minute from start to finish.



## FAST . . . RELIABLE RAMSET SYSTEM SLASHES COSTS . . . AND TIME . . . FOR FASTENING INTO STEEL AND CONCRETE

Every day, thousands of users are making startling economies in money and time with RAMSET FASTENING SYSTEM. For practically any kind of fastening jobs into steel, concrete, masonry, RAMSET does the work faster, better, cheaper.

Let us show you, by comparison with ordinary methods, how you can cut costs up to 60% and do your fastening work in  $\frac{1}{5}$  the time with the modern, reliable, proved RAMSET SYSTEM. Send for details and address of nearest RAMSET Specialist.



**STEMCO CORPORATION**  
12117 Berea Road • Cleveland 11, Ohio  
PIONEER IN POWDER-ACTUATED FASTENING

(Continued from page 70)  
grinding to a halt or a snail's pace.

More than 90% of the cases are settled at this level, but if the two-man mediation board fails to reach a decision or the complaining union is not satisfied with the result, they may bring it to the next and highest authority—a fourteen member arbitration board, comprised entirely of employers, representing the 1,000 contractor members of the association. That's right, the big, strong unions representing New York's 175,000 building mechanics voluntarily submit their disputes to management. And often the decisions have cost the contractors lots of extra money when they agreed to give the work, in all fairness, to the more skilled and higher paid trade.

### Only One Appeal

When the 14-man arbitration board hands down a decision, the losing union has the right to appeal to the national referee of the AFL's Building and Construction Trades Department in Washington. However, in all the years that the building mechanics' unions have been submitting their differences to the panel, only one decision has ever been carried to the national referee, and none to the National Joint Board for Settlement of Jurisdictional Disputes. The unions recognize and approve the arrangements and the NLRB has given its official sanction under the Taft-Hartley Law. Here is uncontested proof that labor and management can get together and happily settle their differences in one of the sweetest collective bargaining setups possible.

### Wage Stabilization Plan

In February 1948 the employers who form BTEA sat down with the unions and adopted a policy of wage stabilization for the area which was the result of seven months of sweating and dickering. Retroactive to January 1, 1948 and binding until June 30 of this year the program was designed to stabilize wages for 30 months, but contained a unique cost-of-living provision. It set up predetermined wage increases applied to current prices, and here's the way it worked:

If the Bureau of Labor Statistics found that the cost of living had gone up more than 15% since the beginning of this plan, workers would receive half the difference

(Continued on page 75)

# terrific man-hour savers



Whiteman Power Buggies used on  
33,000,000 Union Hardware  
Building, Los Angeles. Albert C.  
Martin & Associates, Architects.  
Baruch Corp., Gen. Contractors.

## NEW! IMPROVED! 1950 MODEL

The new 1950 Whiteman Power Buggy does the work of six men with wheelbarrows. It hauls concrete, sand, brick, mortar...anything you can load in or on it...over soft earth, up 25% grades, to upper floors, over light scaffolds, through doorways. Turns in its own length. Capacity enlarged to 13 cu. ft. or 2,000 lbs. Speed increased to 16 mph. New dumping mechanism improves leverage, gives operator positive control of the dump. Weight is reduced to 692 pounds. Powered by 7.5 h.p. 4 cycle, air-cooled engine, has automatic clutch and speed changer. The versatile, tough, dependable Whiteman Power Buggy has thoroughly proved itself with large and small contractors for many years.

Priced to pay for itself in a short time. Send coupon now for details and name of your nearby distributor. Write today!

**WHITEMAN MANUFACTURING CO.**  
3249 Casitas Ave., Los Angeles 39, Calif.

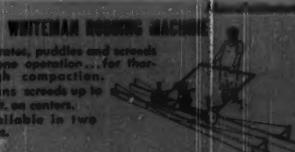
# Whiteman Power Buggy

### WHITEMAN ROLLING MACHINE

Vibrates, puddles and screeds in one operation...for thorough compaction.

Spans screeds up to 20 ft. on centers.

Available in two sizes.



### WHITEMAN FLOATING-FINISHING MACHINE

- With "snap-on" float trowels, brings up moisture and compacts slab.
- Final finishes with finish trowels.
- Pitch adjustable white machine in motion.
- Gas or electric motors, in two sizes.



BARUCH CORPORATION  
6655 WILSHIRE BOULEVARD  
LOS ANGELES 39, CALIFORNIA  
Telephone York 6-291

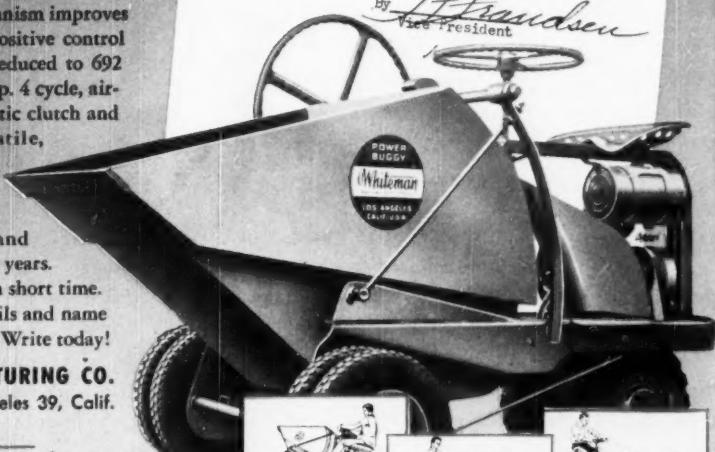


Whiteman Manufacturing Co.  
Gentlemen:

You will be interested in knowing that we have found Whiteman Power Buggies of great value in concrete pouring operations. We have used them in upper floor pours, on flat pans, joist pans, penthouse, roof and fire walls, ground slabs, and for general utility hauling. We have been very well pleased with this equipment.

Yours very truly,  
BARUCH CORPORATION

By *J. J. Frandsen*  
Vice President



Climbs 25% grades with ease.



Also available with dumping stake-type body.

**SEND  
NOW!**

WHITEMAN MANUFACTURING CO.  
3249 Casitas Ave., Dept. C, Los Angeles 39, Calif.  
Please send me name of distributor, literature  
and prices on Whiteman Equipment.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_ State \_\_\_\_\_

# Let your records tell you!



It's no news that the true cost of wire rope cannot be reckoned by purchase price alone. As we've so often pointed out, the real cost is the cost per unit of work it does.

In the case of Bethlehem rope, this figure will be *low*, and you will therefore have an economical rope. But we strongly suggest that *you* prove this to your own satisfaction. Keep some simple records; something to show, for instance, the rope costs per

ton-mile in oil-country drilling . . . or per car of coal hauled up a slope . . . or per cubic yard of rock moved, etc. Pick the most convenient unit of work

applicable to your business. It isn't at all difficult or complicated.

Then, study your records every so often. They'll tell you, far more convincingly than we can, that Bethlehem wire rope is an *economical* rope.



BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by  
Bethlehem Pacific Coast Steel Corporation  
Export Distributor: Bethlehem Steel Export Corporation

(Continued from page 72)

between the 15% and the BLS index. For example, if the cost of living increased 19%, every union building mechanic would receive a 2% raise pegged to the rate of \$3.00 per hr (adopted to make all raises uniform) which would be a good deal more than the basic hourly scale for most unions. Already preliminary plans are being made to renew or modify the agreement at its expiration next June 30.

#### Points With Pride

Mr. Eller sums the entire situation up by saying, "I think the country as a whole would be standing today on a firmer economic footing if every major industry in every section could make the same claim to good labor-management relations, and an on-with-the-work-to-be-done program. After agriculture, the construction business is No. 1 in the nation in annual dollar volume and first in employment opportunities. It's the first industry subject to boom or bust; it's the most reliable indication we have whether or not the United States is healthy or sick economically. Building a house or a national economy is somewhat the same. They both need to start with a good foundation."

#### New York Bricklayers Get First Pension Plan

IN KEEPING WITH the general pattern of wage stabilization outlined in the preceding article, the New York Building Trades' Employers' Association announced on April 17 the signing of a new two-year agreement with AFL Bricklayer Unions affecting 8,000 tradesmen. The new contract calls for a pension plan, financed by 10c per hr contribution by employers, starting January 1, 1950. Details of the plan, to be jointly administered, are to be worked out before that time.

#### No Wage Increase

No increase in wages is stipulated in the agreement, which runs from June 1, 1950, to May 31, 1952, except that the hourly wage will be increased by a percentage rise in the BLS cost of living index above 10%. Thus, when the index rises 12%, wages will be raised 2%. Employer contributions of 3% to union welfare funds, already in effect, will continue.

## Equip dump trucks with Galion **FULCRUMATIC** **HYDRAULIC HOISTS**

**Longer Service Life  
Wider Payload Ranges**



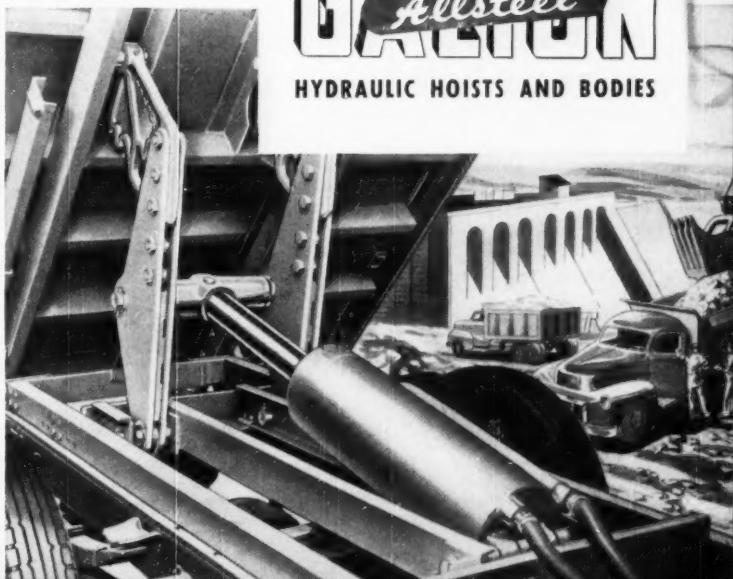
Galion Fulcrumatic Hoists give dump trucks a completely new range of payload usefulness. Im-

proved smoother lifting fulcrums and oversized cylinders mean greater rated lift capacities . . . with entire hoist assembly strengthened to match. New Galion Fulcrumatics lift more, last longer because they work easier . . . with less wear. Yes, these are the most powerful Galion hoists ever built. Ask your Galion dealer how job-engineered Fulcrumatic hoists will better serve your material handling needs.

The **GALION** Allsteel Body Co., Galion, Ohio

**Job Engineered to  
Lift More, Last Longer**

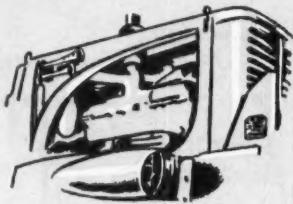
**GALION**  
*Allsteel*  
**HAULION**  
**HYDRAULIC HOISTS AND BODIES**



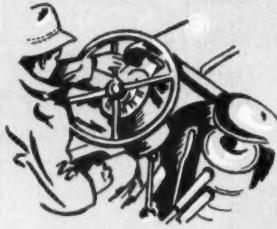


You can heap 'em high and haul in a hurry, when you have a Heiliner! The Heiliner is available with an 18-cu. yd. scraper or 20-cu. yd. bottom-dump wagon.

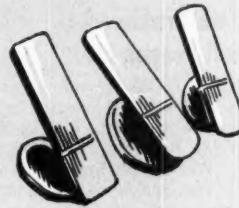
## Here's why operators like Heiliners and move more dirt with them!



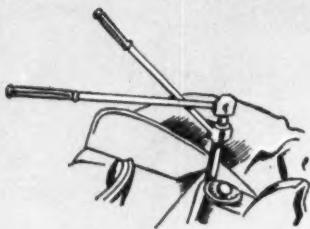
**Power-packed Cummins Diesel.** 200 h. p. engine gives you a high top speed (25 m.p.h., loaded) and plenty of lugging power. Compression release gives quick, easy starts in any weather.



**Patented Hydro-Steer.** Makes handling effortless. Eliminates jack-knifing, over-steering. You can turn the Heiliner with one hand in a 22-foot radius.



**Air-assisted clutch.** Clutching is much easier for the operator — helps make him more productive.



**Adjustable control levers.** The Heiliner cable power control-unit is within finger-tip reach. Control levers are adjustable to suit the operator's convenience.



**Good visibility.** No obstructions block operator's vision ahead or behind. He can always see how he's doing — for maximum loads and faster cycles.

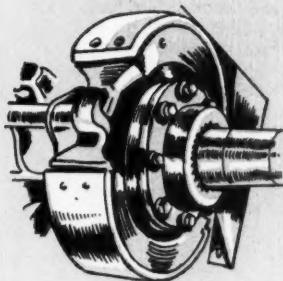


**Comfortable seat.** Reduces operator fatigue, by absorbing the shocks in rough going.

# Heiliners

are built to help you  
meet schedules, save money!

*They move  
more dirt faster  
... at less cost!*



**4-wheel brakes.** Heavy-duty two-shoe air brakes. Also auxiliary hand controls provided.



**Final planetary drive reduction gears** are easily accessible. Service can be performed without removing wheel or disturbing brakes or hub bearings.

TIME schedule tight? Cost of moving dirt figured pretty close? Tackle the job with Heiliners. They really pay out in all kinds of weather, over all kinds of ground and fill conditions.

Ask any Heiliner user. You can bet your bottom dollar he'll tell you how a Heiliner *stays* on the job. How it cuts downtime and maintenance costs. How it's easier for your operator to run and to make a good showing. How it reduces operator fatigue, so that your men move more dirt per shift.

Then, talk to the operator . . . He'll tell you he likes the easy way a Heiliner steers . . . the quick starting . . . the lugging power in the toughest going . . . the unobstructed vision . . . the convenient controls . . . the safety.

All these Heiliner advantages add up to one thing: You make more money on your dirt! Use Heiliners and keep the pay in pay dirt on all your jobs.

Ask your Heil distributor to demonstrate the Heiliner. Ask him about Heil's complete line of earthmoving equipment. Or write today for bulletins.

THE **HEIL** CO.

DEPT. 140, 3002 WEST MONTANA AVENUE, MILWAUKEE 1, WISCONSIN

Factories: Milwaukee — Hillside, N. J.

District Offices: Hillside, Washington, D. C., Atlanta, Milwaukee, Detroit, Chicago, Minneapolis, Kansas City, Dallas, Los Angeles, Seattle

# LEGAL DECISIONS CONCERNING CONSTRUCTION



## The Connecticut Foreman

THE CONTRACTOR had just signed a construction contract, and was discussing "ways and means" with the owner.

"I'm going to put John Doe in charge of the work," the contractor stated.

"He's a mighty good man, and I was going to suggest that you employ him, if you could not take charge of the work personally," the owner concurred.

The contractor put Doe in charge of this work and took charge of a job in another state. The owner went to Florida. When the two returned, the work was completed, and the owner promptly objected that it had not been done according to the contract.

"John Doe was a competent man, you approved of him taking charge of the work, and that lets me out," the contractor maintained.

The Connecticut courts, however, in *Blakeslee v Holt*, 42 Conn. 226, ruled that even if the owner himself had suggested employing John Doe, that did not relieve the contractor from carrying out the terms of his agreement.

## The Silent Jobber

THE CONTRACTOR sooner or later (generally sooner) encounters the question of damages of non-delivery—when the seller fails to make delivery.

The contractor, however, struck a new snag when he bought cement. The manufacturer agreed to make delivery on or before a

certain date and to notify the contractor when the order was ready. He failed to do so, the price dropped, and the contractor refused to take delivery after the time had expired.

In that case, of course, the contractor's junior clerk knew the manufacturer had no redress as he had broken his contract.

The clerk was not so sure of his ground, however, in a later case where, instead of going down, the price of cement jumped like a Mexican bean, and the contractor claimed damages for the manufacturer's failure to deliver.

"When I didn't notify you, that broke the contract, and all rights and liabilities are at an end," the manufacturer maintained.

"No, I don't have to suffer for your breach of contract," the contractor countered, and his point was well taken, as in *Krause v Union Match Company*, reported in 142 Minn. 24, that Court ruled in his favor and there are Illinois, New York and Oregon decisions to the same effect.

## The Alabama Contract

THE CONTRACTOR, president of a Tennessee company, journeyed to Chicago, where, on behalf of his company, he signed a contract to erect a building in Alabama for an Alabama apartment company.

"The said contractor shall have the immediate charge and responsibility for the said work, no part thereof shall be sublet without the consent of the apartment company, and in case of such consent the subcontractor shall be considered an agent of the contractor, who shall still remain liable as if no such subletting had occurred," the contract provided.

The contractor then returned to Tennessee, where he made contracts with various subcontractors, the subcontractors did part of the work, the apartment company stopped paying installments according to the contract, and then the contractor sued the apartment company in the Alabama Courts.

"You are a foreign company, and did not comply with the Alabama law and take out a license to do business in this state so you cannot recover," the apartment company contended.

"All our contracts were made outside Alabama, all the work in that state was done by the subcontractors, who were independent contractors, and not our agents," the contractor maintained, but the Alabama Supreme Court in *Alabama Western R. R. Co. v Talley-Bates Etc. Co.* as reported in 162 Ala. 396, ruled that the contractor could not collect, in view of the provisions in the contract quoted above.

## The Rejected Flooring

THE CONTRACTOR had bought flooring of a certain grade, the seller shipped more than the quantity ordered, so refused to take delivery.

"When you shipped more than the order called for, that was in effect a mere offer to sell me a larger quantity, which I had the option of accepting or rejecting," the contractor argued. The seller employed a lawyer and the latter threatened suit.

"I am also rejecting the flooring because it was not of the specified grade," the contractor wrote back.

"Your original objection was to the quantity of the flooring, and you're too late in objecting to the quality," the lawyer replied.

"I did not know that the quality was below par when I rejected it first, but I did know that there was too much," the contractor proved, and the Missouri Courts ruled in his favor in *Fowler v Cobb*, 232 S. W. 1045.

## The Injured Employee

THE GEORGIA EMPLOYEE had been injured while working for a contractor in that state.

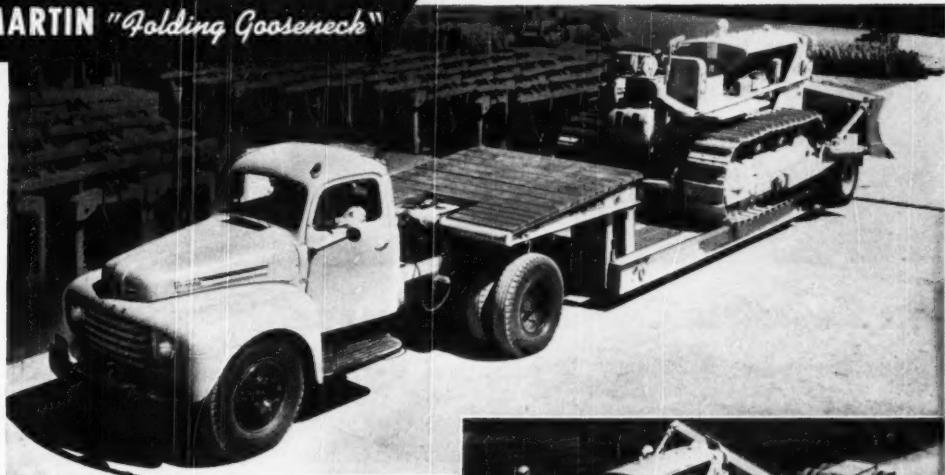
"If you'll not start anything you can have a house and lot that I own for as long as you live," the contractor promised. The employee took possession of the house and lot, and then the contractor attempted to eject him.

"There was no consideration to make the agreement binding on my part," the contractor argued.

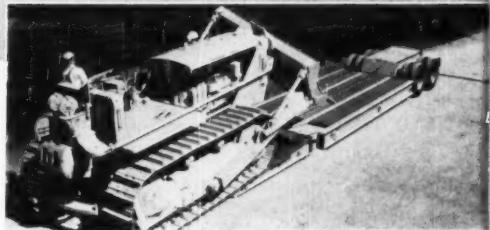
"My not starting a suit was consideration enough," the employee maintained, and the Georgia Courts ruled in his favor in *Cruselle v Pugh*, 71 Ga. 744.

# MARTIN's exclusive features cut man hours with TRAILERS that do away with ramps

## MARTIN "Folding Gooseneck"



By eliminating cribbing and ramps, the new Martin "Folding Gooseneck" trailer speeds production, increases equipment hours. "Gooseneck" lowers to form own ramp; loading and unloading become fast, simple one-man operation. Low platform height increases clearance, roadability. Models F3T, F4T and F5T. Capacities: to 32 tons.



## MARTIN "Tilt-Type"

(MODEL 222)



Martin "Tilt-Type" trailers form their own ramps to add mobility to every job. Enables equipment to move from job to job where needed, with loading and unloading reduced to quick one-man operation. Operator merely drives on and pulls away, drives off and goes to work. Three Models: 22, 222 (shown here), and 333. Capacities: to 11 tons.

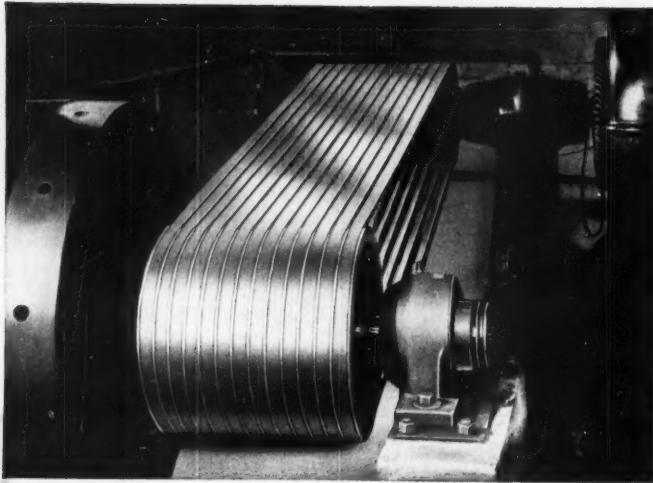


## THERE'S A MARTIN "CARRYHAUL" TRAILER FOR EVERY JOB

Martin "Carryhaul" trailers have many exclusive patented features specifically designed to save you time and money.

*Write* for complete information, specifications, on these and other Martin "Carryhaul" trailers.

**MARTIN MACHINE CO.**  
KEWANEE, ILLINOIS  
YOUR CATERPILLAR DEALER IS YOUR MARTIN  
DEALER



## THE Smoothest Running V-BELTS MADE New Improved Condor Whicord V-Belts

Manhattan Engineers, constantly working to lower your power transmission costs, have developed New Improved Condor V-Belts for still longer life, better wear and smoother running.

Strength members of super-strength synthetic fiber cords, are precision controlled on the neutral axis "power line" of the V-Belt. This precision control is possible only with the Manhattan developed full molding, pressurizing process.

Variation in V-Belt balance is now virtually eliminated—

To you, this means more perfectly balanced V-Belts with longer life, less vibration and wear on your V-Belt powered drives. If you are not already one of the many users who are convinced of the important savings in these New Improved V-Belts, be sure to specify Condor Whicord V-Belts on your next requisition. Buy through your Manhattan Distributor.

(Note: For tough, rugged drives, try the new brawny RAY-MAN V-Belts, which are also non-spark, oil-proof and heat resistant.)

### DO YOU HAVE THIS FOLDER IN YOUR FILE?

This useful V-Belt Bulletin #6868C will be mailed on request.

Keep Ahead with Manhattan

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY



# RAYBESTOS-MANHATTAN, INC.

Manufacturers of Mechanical Rubber Products • Rubber Covered Equipment • Radiator Hose • Fan Belts • Brake Linings • Brake Blocks • Clutch Facings • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive & Diamond Wheels • Bowling Balls

## The Heat Will Be on Your Equipment ... Prepare For Summer Temperatures

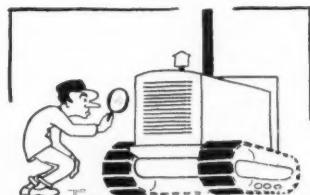
The following excellent advice on getting equipment ready for hot summer operation appears in the current issue of the LeTourneau Co-operator, and is re-published here with LeTourneau's permission.—EDITOR

SUMMER'S hot temperatures will soon be with us, so now is the time to be thinking about preparing your equipment for warm weather operation. Here are suggestions to help you get your machine prepared and to keep it working at top efficiency throughout the hot season.

### Cooling System

One of the most important things to check is the radiator and cooling system. Drain and flush it thoroughly. In this way, you'll remove accumulated rust and contamination and insure good circulation for proper cooling.

Look for leaks in radiator, hose or connections. Make sure all con-



... Look for radiator leaks

nections are tight. Repair or replace damaged parts.

Make sure that the water pump is in good operating condition. During hot weather keep radiator full of clean, fresh water.

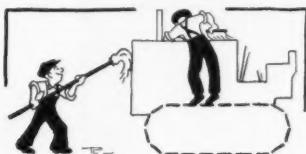
Keep the outside of the engine wiped off clean, as a blanket of dirt on the engine does no good.

### Drain Lightweight Oils

Drain winter-weight oils from the engine crankcase, transmission and final drive. Here again, it is a good idea to flush with a good flushing oil to remove sediment, sludge, etc. Refill with good quality summer-weight oil. Refer to your equipment manuals for recommended oil weight. Don't try to use winter-weight oil in warm weather.

as the lighter oil will not lubricate properly. This can cause expensive damage to equipment.

Unpainted surfaces rust easily. Clean and paint surfaces where



... Clean and Paint to Prevent Rusting

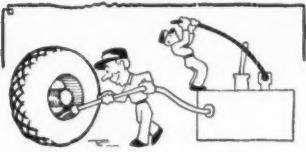
paint is worn off or where welding has been done.

Check for cuts or breaks in tires and keep tires properly inflated at all times.

Check battery water level and voltage reading at frequent intervals. Keep batteries well charged.

### Make Maintenance Checks

Each morning before operating your machine, perform all recommended preventive maintenance services. This should include not only necessary lubrication, but



... Keep Tires Properly Inflated

you should also make it a habit each morning to check tire pressure, battery water level and oil level.

By following these tips and taking care of your equipment, you'll find that its operation will be easier during summer weather.

Remember, equipment makes the job . . . take good care of it.

### COMING — In July

Construction Methods and Equipment's special issue devoted to Construction Equipment Maintenance. The theme will be "Preventive Maintenance."

**WATCH FOR IT!**

# HELTZEL



## SUPERIOR ROAD & AIRPORT

Compare Heltzel forms with any other. Point for point Heltzel forms are outstanding in construction features and on-the-job advantages. Like all good equipment, they afford economies in working time while assuring a better job.

## Forms

- HEAVY DUTY ROAD FORMS
- MILITARY HIGHWAY FORMS
- DUAL DUTY AIRPORT-HIGHWAY FORMS
- ISLAND AND CATCH BASIN FORMS
- ROAD FORM ATTACHMENTS



**TEST PROVEN** — State highway tests show Heltzel builds better forms. Average results prove Heltzel 20% better.

**JOB PROVEN** — Veteran Heltzel forms can be seen on many jobs — they last longer. They don't wiggle and weave under pressure and movement of heavy equipment — they stake firmly and carry the load.

### HELTZEL DUAL DUTY FORMS



Each dual duty form can be used to make two thicknesses of concrete slabs. Illustration above shows same form in upright position for 24" slab and side position for 20" slab. Sizes from 8" up.

Get details  
**WRITE FOR  
BULLETIN**

### HELTZEL STEEL FORM & IRON CO. WARREN, OHIO, U. S. A.

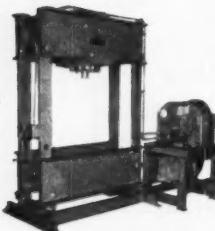
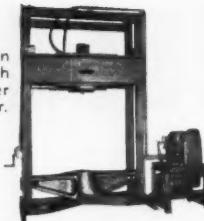
Please send information regarding:  
Road and Airport Forms \_\_\_\_\_  
Curb and Gutter Forms \_\_\_\_\_  
Batching Plants and Bins \_\_\_\_\_

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

# HELTZEL

STEEL FORM & IRON CO.  
WARREN, OHIO • U. S. A.

**SPECIAL 150** Ton Open Yoke Vertical Press with adjustable head member and double-acting cylinder.



**STANDARD 200** Ton Shop Press with 4-Cylinder Power Pump and double-acting cylinder.

## ...THE FINEST PRESSES FOR THOSE 101 SHOP JOBS

# Rodgers 100, 150 AND 200 TON SHOP PRESSES

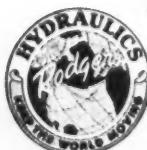
### Fast, Versatile Hydraulic Presses With Hand or Power-Driven Pumps

HERE are versatile, time-saving presses you can use in a hundred ways — the Rodgers 100, 150 and 200 Ton Hydraulic Shop Presses, operated with your choice of the new 4-speed Hand Pump or Power Pump.

The standard 100, 150 and 200 Ton Units include many construction and operating features — the cylinder is movable across entire width of upper head member — Two-way Travel Cylinders can be used when necessary to return heavy dies — Sturdy Press Frame permits full pressure to be applied anywhere across 48" width of lower bolster — Bolster adjusts from 12" to 36" — and there are open ends between uprights to accommodate long material extending through.

If specifications on the standard models don't meet your requirements, we'll modify them or build a special press as required.

There are standard model Rodgers Shop Presses in 60, 80, 100, 150, 200, 300 and 400 Ton Capacities!

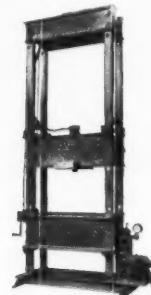


# Rodgers Hydraulic, Inc.

7403 WALKER ST., ST. LOUIS PARK, MINNEAPOLIS 16, MINN.

**HYDRAULIC POWER EQUIPMENT**

**STANDARD 150** Ton Shop Press with new Rodgers 4-Speed Hand Pump capable of producing 10,000 psi. maximum pressure.



**SPECIAL 150** Ton Shop Press featuring a 96" opening with adjustable head and bolster.

**SEND FOR  
CATALOG...**

New Catalog 313 has descriptions and specifications on the complete line of shop presses.

# LINK-BELT SPEEDER



## as a reporter . . .

I'm going to travel and tell you about Link-Belt Speeder machines, jobs and owners in all parts of this great country.

I like to write about Link-Belt Speeder Shovel-Cranes because I know the complete line is engineered and built to contractors' specifications.

I have already learned that owners appreciate Link-Belt Speeder ruggedness; they know how well they stand up under high pressure road building conditions, digging earth and rock everywhere. And they tell me Link-Belt Speeder distributors are always ready and willing to help with service and maintenance problems RIGHT NOW.

Operators say: "Speed-o-Matic hydraulic controls are wonderful: We can get the speed and steady production that makes the Boss smile—for a change."

This job of reporting on Link-Belt Speeder operations promises to be a cinch. I just tell them where I'm from and owners and operators tell me plenty of good things about their Link-Belt Speeders. And when they're happy and proud to boost their machines, Brother, it's always a pleasure to write this good news to the folks back home.



### "They" say the New LS-51 is a Honey!

The true word is spreading fast that the new LS-51 is the fastest, easiest operating, most dependable machine in the  $\frac{1}{2}$  yard field.

The LS-51 above, equipped with  $\frac{5}{8}$  yard bucket is the fifth Link-Belt Speeder owned and operated by Lloyd Vandegrift of Minerva, Ohio. He's been operating shovels for 26 years and he says: "Sure I like my new LS-51, especially the easy operation of Speed-o-Matic controls. I keep the trucks humming all day, and you know what that means."



# The New INTERNATIONAL TD-24



## HERE'S WHAT THE



Positive all-weather starting on gasoline, with quick change-over to full diesel operation, all from the seat.



Separate reverse lever for quick change of direction. The tractor moves in the direction the lever is moved.



Self load and run with scrapers of 17-yard capacity—and shift gears on-the-go with the rolling load.



Cut waste shifting time out of work cycles, provide the best speed for every operation, 8 speeds in each direction!



# INTERNATIONAL



# CHAMPION of Crawlers

"The TD-24's work right along on slopes so steep we have to cut them down before other tractors can climb them even without loads," says Bob Rardin of Rardin Brothers, Akron, Ohio. "They are fast tractors, easy to shift and have plenty of power. This combination really moves dirt." His TD-24 was equipped with a bulldozer.

"It will out-buck any tractor I've ever run," says Harold Wooley's operator, Drain, Oregon, "and sure push dirt up hill—and climb steep grades." His TD-24 works regularly on 30% to 50% grades, building mountain roads.

"I wouldn't have anything else," says another Oregon operator. He works for V. R. Russell &

Sons of Valsetz. "It's sure fine on bulldozing; best dirt mover I ever got hold of."

That's the way owners and operators talk about the International TD-24 Crawler. It has earned their praise, for it does everything any other big tractor can do, *plus many things that NO other tractor can do*. The TD-24's versatility makes it the most useful and profitable earth-mover in any equipment line-up.

Visit your International Industrial Power Distributor for a demonstration. Then ask yourself how long you can get along without this big red worker and the extra earnings it will produce.

INTERNATIONAL HARVESTER COMPANY  
Chicago

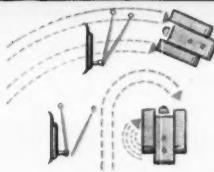
## TD-24 CAN DO FOR YOU



Instant speed change up or down one speed, or stop, without declutching. Planet Power drive does it!



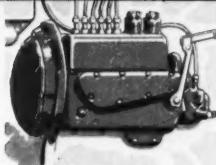
Work on grades up to 100%. Its power, ground contact, balance and lubrication are right for licking any grade.



Planet Power steering puts turns with power on both tracks, feathered turns and pivot turns at your fingertips.



Handle heaviest loads on gradual turns as easily as straightaway because both tracks are powered in the turn!

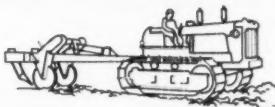


Torque Control feature of fuel injection pump increases engine torque when needed to overcome overloads.

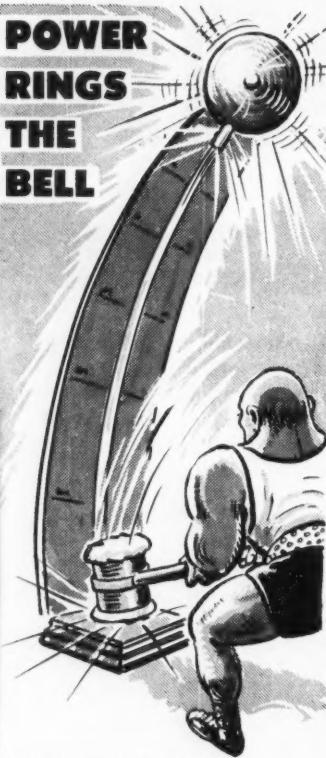


Push or pull through tough going. The engine delivers extra "power" when its r.p.m. is pulled down by load.

## INDUSTRIAL POWER



## POWER RINGS THE BELL



### WARRINGTON-VULCAN SINGLE-ACTING STEAM PILE HAMMERS

The power of this great hammer pays off for you in fast, economical pile driving. From one tough job to another, year after year, this power is at peak efficiency, maintained by Warrington-Vulcan's built-in ruggedness and a simplicity of design that minimizes mechanical difficulty. It's an even, positive power developed by rapid, regular, continuous action that sinks all types of piles easily even in heavily resistant soil.

Operating at medium steam pressure, Warrington-Vulcan delivers a moderate frequency of low velocity blows from a relatively heavy ram. All working parts are exposed for easy accessibility.

We'll gladly supply complete details. Write today.



240-ft cable tramway erected to help in...

## Removing Stonework Loosened by Earthquake

WITH ANCHORS WRENCHED loose and back-up bonds weakened from a serious earthquake last spring, cornice and parapet stones on Washington State Insurance Building and cupola stones on State Capitol were in danger of loosening entirely and toppling off or down through the respective structures. The General Construction Co. of Seattle hurriedly erected a supporting scaffold alongside the insurance building and braced it with telephone poles. Next they rigged up a catch-all scaffold and tram

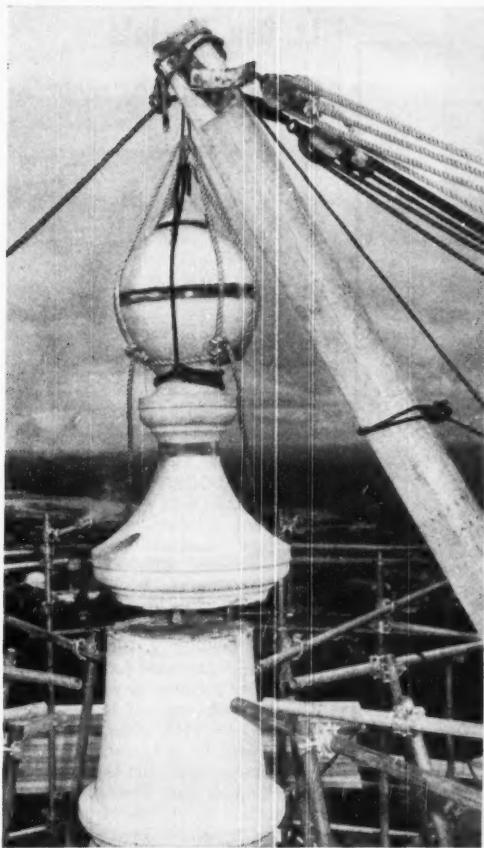
car arrangement up to the capitol cupola. A hand-operated traveling crane transferred the stones to the car for the easy descent. Meanwhile a truck crane gingerly picked up and removed the cornice stones from the adjoining building and cleaned up the rubble of back-up brick and mortar. All work was thus handled outside the buildings with little or no interference to personnel. The 150 pieces of Wilkeson sandstone weighed more than 100 tons and were removed safely without incident.

**VULCAN IRON WORKS**  
Since 1867

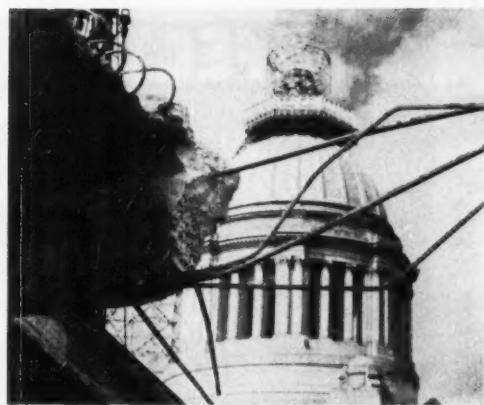
331 North Bell Avenue



Chicago 12 --- Illinois



CAPSTONE REMOVAL was first ticklish rigging job which followed earthquake damage to Washington state capitol. Ginpole lifted 1,600-lb stone and transferred it to tram car shown in first photo for easy descent to ground.



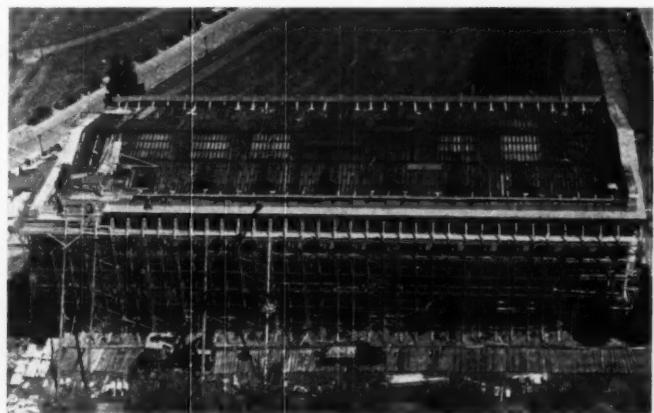
VIEW FROM DAMAGED State Insurance Building shows tubular pipe scaffold encircling entire cupola with catch-all safety scaffold beneath. Hand-operated traveling crane was hung from I-beam laid across pipes, and removed cupola stones weighing up to 3,000 lb.



CORNICE ON nearby Insurance Building was shaken loose and had to be removed. Note broken anchors, overhang and separation from wall. With 2x4 wedged tightly underneath, mortar was broken out . . .



. . . AND STONES, weighing up to 3,000 lb, removed one at a time by crane. Adjustable chain sling made grabbing easy. Note double wedging between undersides of stones and scaffold capping.



DURING REMOVAL entire cornice was supported by staging braced in turn by telephone poles. While waiting for stones, Lorraine Motocrane ran on plank bed and loaded rubble into trucks.

# PERFECTION

IS THE NAME TO REMEMBER  
WHEN YOU WANT--

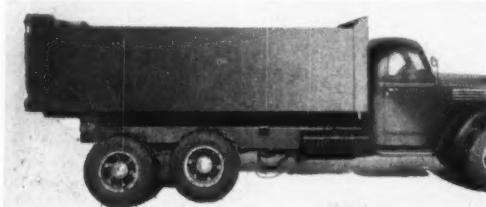
ENGINEERED-TO-THE-JOB

## BODY AND HOIST CONSTRUCTION



Photos show PERFECTION No. 354 Special Dump Body and No. 1027 Iso-Dreulic Roll-A-Lift mounted on International truck. Length of body 192"; width 96"; capacity 16 yds. Can be made in various sizes.

On this PERFECTION Body the triangular side braces are placed on the INSIDE of the side plates--permitting the sides to be mounted flush with edges of the platform. This design increases the inside dimension between sides almost one foot, resulting in greater volume capacity. In comparison with bodies having outside braces, this design also has the advantage of permitting the use of a smaller body for any given volume capacity requirement. This reduction in body size may be in height, length or width, as desired.



Write for complete information

**THE PERFECTION STEEL BODY CO.**  
GALION, OHIO, U. S. A.

**PERFECTION**  
STAKE and DUMP BODIES  
HYDRAULIC HOISTS



**FOR ANY TRUCK**  
STANDARD or SPECIAL UNITS  
IN ALL SIZES • FOR ANY USE

## Lt. Gen. Reybold

Heads ARBA



LT. GEN. EUGENE REYBOLD has been appointed executive vice-president of the American Road Builders' Association. As chief administrative officer of ARBA, he succeeds Charles M. Upham who retired recently after 24 years as the association's engineer-director.

Gen. Reybold, a 1903 civil engineering graduate of the University of Delaware, was wartime Chief of Engineers, U. S. Army, and retired 1946 after more than four years in that post. Previous assignments with the Corps of Engineers included: District engineer at Buffalo in charge of river and harbor work on Lakes Erie and Ontario and the Niagara and St. Lawrence Rivers; district engineer at Wilmington, N. C., and Memphis, Tenn.; Southwestern division engineer at Little Rock, Ark.



**CHAIRMAN**—New 1950-51 chairman of Construction Industry Advisory Council is Carlton S. Proctor, New York consulting engineer, member of Moran, Proctor, Freeman & Mueser, and past vice-president and director of American Society of Civil Engineers.



**Quick getaway\***

\*We've changed our  
layout to speed  
packing and loading.  
Now your order of  
fine Hermitage Cements  
gets rolling to your  
destination faster than  
ever before.



**Hermitage Portland Cement Company • AMERICAN TRUST BUILDING, NASHVILLE 3, TENN.**



# P&H

# GREAT

## LETS YOU PUT MORE

## ON

**Now You Can Get  
Maximum Work Capacity**

But you require more than engine power alone . . . you must have stability. Every action has an equal and opposite reaction. The hook load limit is what your machine will lift without losing its stability. P&H excels in lower center of gravity . . . in better weight distribution . . . resulting in a higher ratio of lifting capacity in relation to gross weight. Thus, stability is actually a measure of lifting capacity. P&H gives you more of it. You can prove it for yourself.

**P&H**

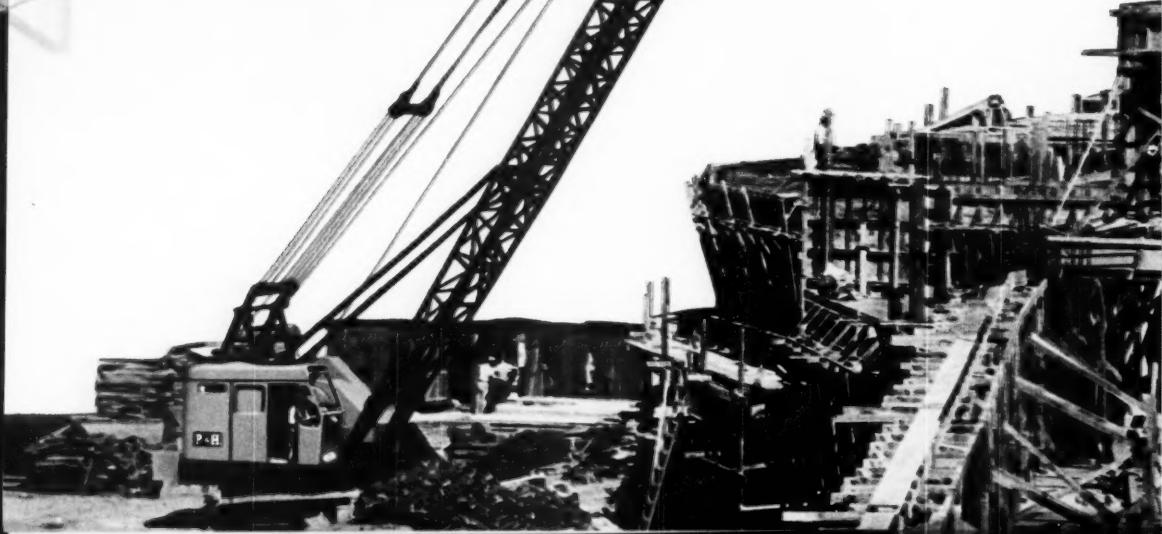
**EXCAVATORS**

4494 W. National Avenue  
Milwaukee 14, Wisconsin

**HARNISCHFEGER**  
CORPORATION

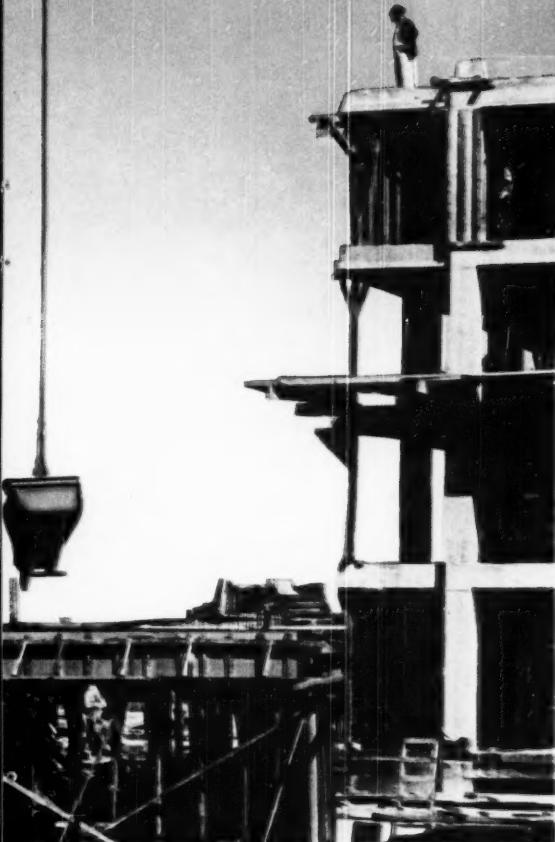
POWER SHOVELS & CRANES • OVERHEAD CRANES • HOISTS • WELDING • HOMES • DIESELS

 P&H



# STABILITY

## ON THE HOOK



LOOK TO

**P&H**

FOR ADDED VALUES

### GIVES YOU MORE POWER AT THE TOOTH POINT

Stability is the major function of digging power, too. The same stability which gives P&H greater lifting capacity also gives you more tooth point digging power. Without useless deadweight, you have more power available...faster overall operation...lower production costs.

1. All welded construction of rolled alloy steels...originated by P&H...more highly developed by P&H.
2. True tractor-type crawlers, most efficient traction on any excavator. You can make sharp or gradual or about-face turns.
3. Low pressure hydraulic control is smoother...more responsive...easier on both operator and machine.
4. Rapid reversing planetary chain crowd gives you faster, more positive bite. Crowd chain outlasts 20 to 30 crowd cables.
5. Simpler design gives you an easier machine to work on...simplifies maintenance...reduces lay-up time...cuts costs.

Only P&H gives you these Added Value features and at no extra cost.

### ASK YOUR P&H DEALER

P&H Excavators and Truck Cranes are more easily converted for the various types of service shown below—with hoist and digging drums on one shaft, the need for auxiliary shafts and gearing is eliminated. You also have a choice of gas, Diesel or electric power. Ask for literature on the size you need.



SHOVEL



DRAGLINE



BACKFILLER



CRAWLER CRANE



MAGNET CRANE



TRENCH HOE



PILE DRIVER

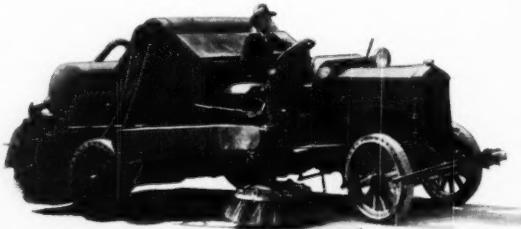


TRUCK CRANE

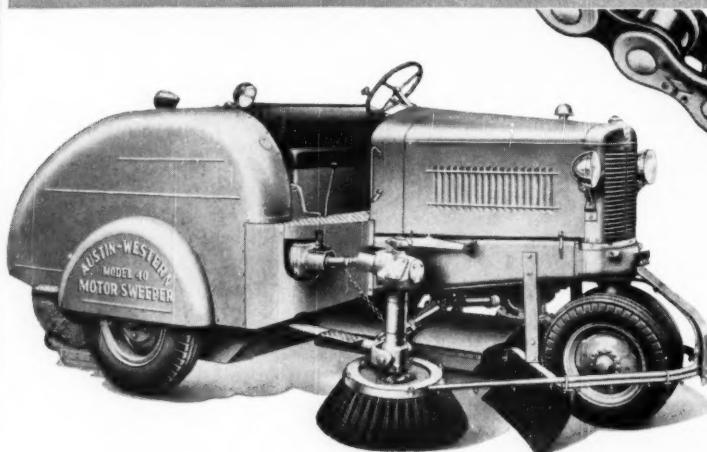
# On the Original—and



The first Motor Sweeper Equipped with a Gutter Broom



# On the Latest Austin-Western Motor Sweeper



Diamond Chains, although shielded from view — are used on this latest Austin-Western Motor Sweeper — as on the original model built years ago.

## DIAMOND ROLLER CHAINS

On so many early models of machinery and equipment Diamond Roller Chain Drives were incorporated as original equipment . . . Today, too, you can find Diamond drives on the streamlined, high speed models that meet present day requirements.

As a result of the long years of cooperation between machinery builders and the Diamond

engineering staff, you too may find the practical suggestions on chain drives well worthwhile. DIAMOND CHAIN COMPANY, Inc., Dept. 418, 418 Kentucky Avenue, Indianapolis 7, Indiana.

*Offices and Distributors in all principal cities.*

Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS



## Tractor Runs O. K. After Long Burial in Antarctic Ice



ENTOMBED SEVEN YEARS in Antarctic ice at Little America, Bay of Whales, an International T-20 tractor was put back into expedition service upon being released from its icy grave. Apparently it suffered no harm from its long, cold burial.

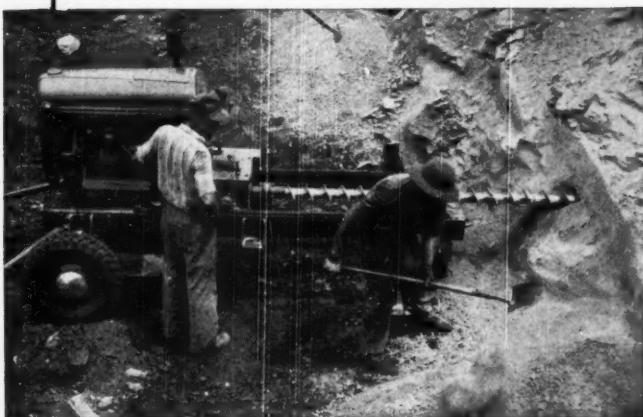
Capt. Vernon D. Boyd, U. S. Marines, reports that as master mechanic of Admiral Byrd's Antarctic expedition in 1939-41, he left the tractor, already a veteran of 3,500 mi. of hauling operations, in the main bunkhouse when the West Base was evacuated. There recently on another mission, Capt. Boyd dug the tractor out of solid ice formed by snow drifting over the building. He recovered the carburetor float bowl from the building ventilator, placed there to thwart Jap "fishermen" scouting the base in 1941.

After a few starting trials, the tractor broke into a roar familiar to Capt. Boyd's ears. He immediately put the machine into service hauling supplies.

# Parmanco

HI-SPEED HORIZONTAL  
D R I L L S

New Traction Drive with Forward and Reverse



**THIS UNIT IS  
DELIVERING  
6-inch shot-holes  
READY FOR LOADING**

*at better than  
A FOOT A MINUTE!!*

The new Parmanco Hi-Speed Horizontal Drill is completely redesigned around a 40 h. p. engine with four drilling speeds which, in field tests, has cut one-third off the footage drilling time—a cost-per-drilling-foot saving that we are passing on to the strip mine operator and contractor at no increase in our price. In addition, the drill is equipped with a starter and generator, dual type front wheels, truck type rear axle with mechanical brakes and a traction drive with both forward and reverse.

• For both Mines and Construction

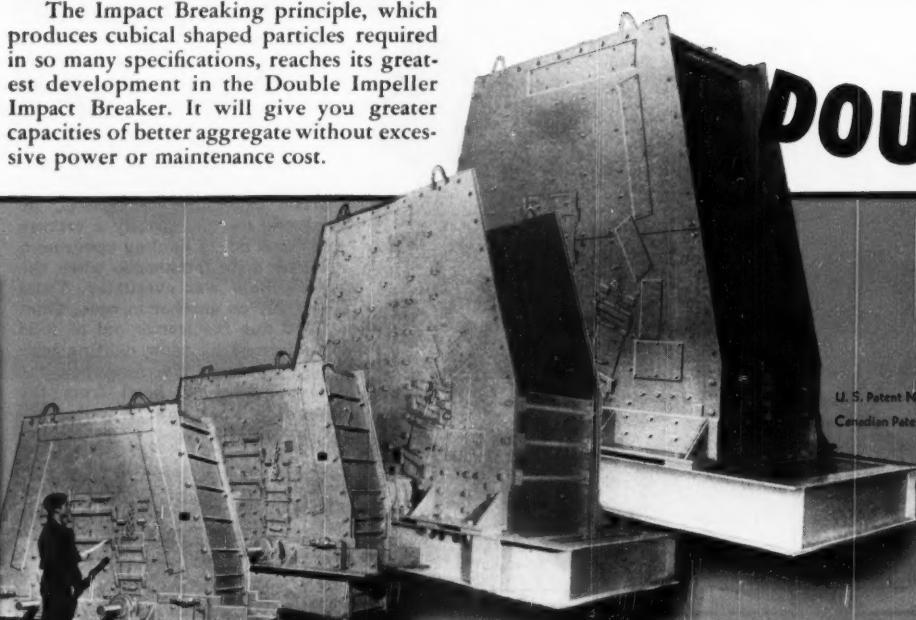
**PARIS MANUFACTURING COMPANY • PARIS, ILLINOIS**

HERE'S the latest addition to the already broad line of Cedarapids crushers! The Double Impeller Impact Breaker, formerly made by New Holland, makes it possible to handle almost *any* primary or secondary crushing job with Cedarapids equipment.

The Impact Breaking principle, which produces cubical shaped particles required in so many specifications, reaches its greatest development in the Double Impeller Impact Breaker. It will give you greater capacities of better aggregate without excessive power or maintenance cost.

# NOW A

# DOUBLE



U. S. Patent No. 2373691  
2486491  
Canadian Patent No. 429371

## Proved Advantages of Cedarapids Double Impeller Impact Breaker

- ✗ **EXTREMELY** high ratio of reduction means less accessory equipment such as conveyors, hoppers, screens, elevators and secondary crushers.
- ✗ **PRODUCES** ideal cubical product even in slabby material. In eastern quarries where conventional types of crushers broke the stone up into high percentages of flats and elongated particles the Impact Breaker reduced the percentage from 24% to 6%.
- ✗ **ELIMINATES** most soft stone from the finished product.
- ✗ **Can be operated** in contaminated material where most other types of equipment would clog, because a greater number of large pieces of stone or gravel bombarding the cage bars help to keep the breaker clean.
- ✗ **LESS horsepower** required per ton of material

✗ **in most all cases** because the massive impellers statically balanced, have a flywheel effect and a great percentage of stone is broken in mid-air by stone hitting stone resulting in a greater reduction in milling and crushing action.

✗ **BIG** volume production. In a dolomite installation in Ohio the operator claimed 720 tons per hour using two 150 h.p. motors.

✗ **APPROXIMATELY 50%** less contact of stone on metal because a high percentage of the material is broken by impact against other material rather than against the breaker bars. Also attrition minimized as entire discharge opening is free of grates, etc.

✗ **BIG** production and high reduction ratio mean lower plant investment.

CHOICE of four sizes from Model 5050, which will take 50" rock up to 400 tons per hour and reduce it to 4" minus in one operation, down to the Model 2020 with its 20" square feed opening.

**Cedarapids**  
Built by  
IOWA

## THE IOWA LINE of Material Handling Equipment Includes:

ROCK AND GRAVEL CRUSHERS • BELT CONVEYORS • STEEL BINS • BUCKET ELEVATORS  
VIBRATOR AND REVOLVING SCREENS • UNITIZED ROCK AND GRAVEL PLANTS • FEEDERS  
TRAPS • PORTABLE POWER CONVEYORS • PORTABLE STONE AND GRAVEL PLANTS  
REDUCTION CRUSHERS • BATCH TYPE AND VOLUMETRIC TYPE ASPHALT PLANTS  
HAMMERMILLS • DRAG SCRAPER TANKS • WASHING PLANTS • SOIL COMPACTION UNITS  
STEEL TRUCKS AND TRAILERS • KUBIT IMPACT BREAKERS

# Cedarapids

Built by  
IOWA

# PRODUCT!

## IMPELLER IMPACT BREAKER (formerly New Holland)

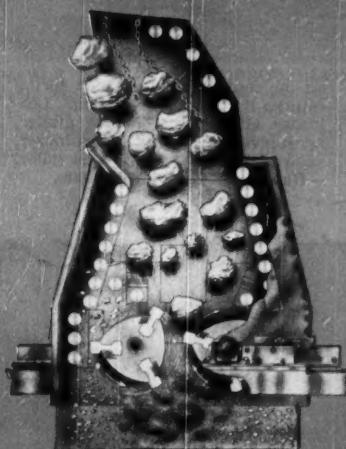
### DOUBLE IMPACT ACTION GIVES YOU ALL THESE ADVANTAGES

★ MATERIAL entering the breaking chamber falls directly onto the rotating impellers. Rotating upward and outward at speeds up to 1000 rpm., these Double Impellers smash the material in mid-air. Up to 6000 smashing blows a minute crash against the material in the breaking chamber.

★ High percentage of fines can be obtained by operating the impellers up to 1000 rpm. with close bar settings, thereby eliminating need for secondary reduction equipment in many instances.

★ These breakers can be used for primary and secondary reduction depending upon the application and the model used.

★ Only two moving parts—the impellers—both easily accessible. Minimum down time for repairs or replacements because of simplicity of design.



Sectional view of Cedarapids Double Impeller Impact Breaker showing simplicity of construction and operation. Material falls directly onto impellers and is hurled against the breaker bars and other material in the breaking chamber.

The product size is controlled by the speed of the impellers and the adjustment of the breaker bars. No mechanical change is necessary to change the size of product but simply increase or decrease the speed.

Only Cedarapids Double Impeller Impact Breakers give you all these features. No imitation can equal their performance. Protected fully by patent. Beware of imitation.

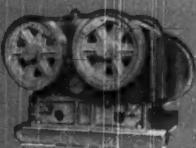
### To Present Owners of New Holland Double Impeller Impact Breakers

When you need new equipment or replacement parts on your present machine address your inquiries to Cedar Rapids or call your nearest Cedarapids distributor.

### OTHER CEDARAPIDS CRUSHERS



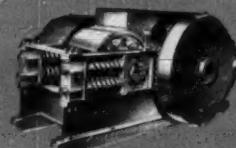
JAW CRUSHERS  
in sizes from  
32" x 40" to 6" x 12"



TWIN JAW CRUSHERS  
in four sizes from  
1836 to 1216



HAMMER MILLS  
in three sizes from  
4033 to 2023



ROLL CRUSHERS  
in six sizes from  
4024 to 1616



KUBIT IMPACT BREAKERS  
in four sizes  
Nos. 0, 1, 2, 3, 4

# IOWA MANUFACTURING COMPANY

Cedar Rapids, Iowa, U. S. A.

# CONSTRUCTION EQUIPMENT NEWS • A Preview of

By MELVIN DEAN, Equipment Editor



**MAINTAINER-MOUNTED LOADER**—Hydraulically operated Lift-Loader can raise a 1,000-lb load to a height of 9 ft 8 in. Lip of bucket reaches 34 $\frac{1}{4}$  in. ahead of front wheels. Bucket is tripped by lever

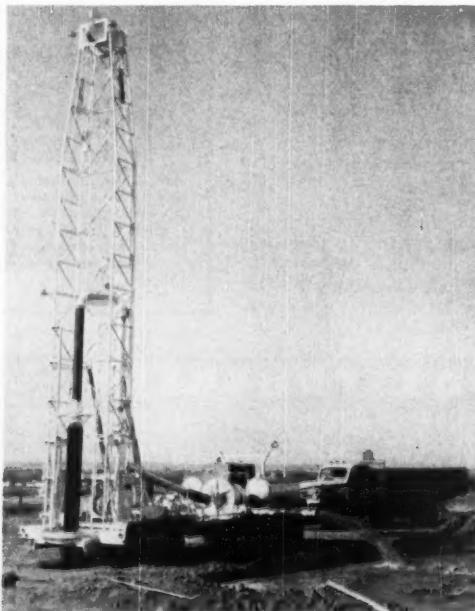
on the control panel; tension spring returns it to loading position. Lift-loader attachments include grader, berm leveler, road planer, bulldozer, snow plow, mower, and patch roller.

—Huber Mfg. Co., Marion, Ohio.

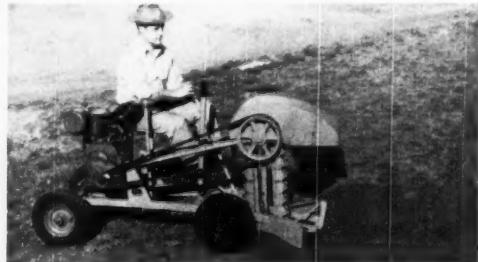


**LIGHTWEIGHT, PORTABLE AUGER**—Ground Hog Digger features slow speed and limited feed. Augers are available in 6- to 12-in. diameters.

—Portable Earth Auger Co., P. O. Box 290, San Bernardino, Calif.



**DRILL EMPLOYS REVERSE-CIRCULATION PRINCIPLE**—Portadrill allows water to settle in hole and be drawn up inside drill stem by vacuum action of gravel pump. Limitation of principle is one of depth rather than circumference. Field tests indicate that 60-in.-dia holes can be drilled to depths of 600 ft and more. Drill is mounted on a 4-wheel trailer.—The Winter-Weiss Co., 2201 Blake St., Denver 2, Colo.



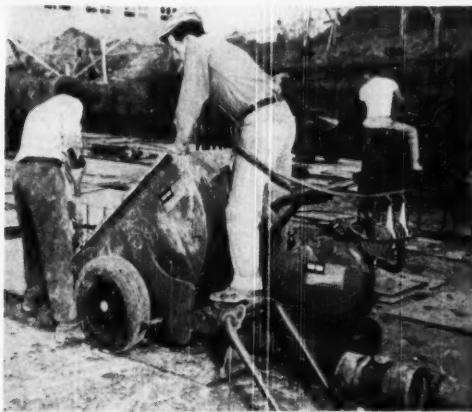
**MIDGET-SIZE TRENCHER DIGS A 4 $\frac{1}{2}$ -INCH DITCH**—Digging mechanism of the Ditch-Witch is hydraulically raised and lowered. Chute deposits spoil on either side of trench. Adjustable scraper follows digger to provide a clean-cut ditch. Trenches wider than 4 $\frac{1}{2}$  in. are dug by making multiple cuts. Maximum depth is 30 in.

—Charlie's Machine Works, Perry, Okla.

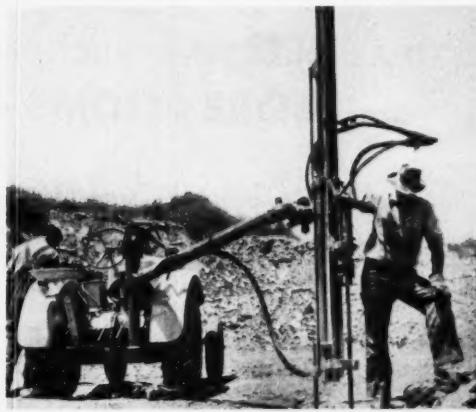


**FOUR-WHEELED CABLE-OPERATED SCRAPER**—Capacity of Model 625 open-bowl scraper is 24.5 yd heaped (19.2 struck). It is designed for use with the Allis-Chalmers HD-19 tractor. Cutting edge is bowed and of three-piece construction. End and center sections are reversible. Three tire options are offered. The 625 has a 78-in. gate opening.—Gar Wood Industries, Inc., Dept. 022-1, Findlay Division, Findlay, Ohio.

## New Machinery, Tools and Equipment That Will Help You on the Job



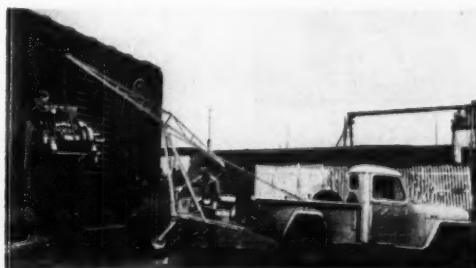
**POWER CART HAS INTERCHANGEABLE TRAYS**—Improved Gar-Bro Power-Cart features three interchangeable trays. Weight capacity is 2,000 lb; bulk capacity, 14 ft. Power-Cart travels 10 mph, and climbs 20% grades with capacity loads.—**Gar-Bro Mfg. Co., 2416 E. 16th St., Los Angeles, Calif.**



**SELF-PROPELLED WAGON-DRILLING UNIT**—One-man-operated unit consists of swinging boom extended from Le Roi 105 Tractair and universally mounted guide shell for 6-ft steel change. This unit will drill angle, vertical, or horizontal holes at any elevation.—**Le Roi Co., 1700 S. 68th St., Milwaukee 14, Wis.**



**TRANSIT MIXER FEATURES LIGHT WEIGHT**—Lighter weight, lower price, shorter length, faster operation, and reduced cost of upkeep are advantages claimed for the new line of Jaeger Payloader truck mixers and agitators. Drums have continuous-spiral blades with additional throw-back re-mixing blades. Fluid drive is available.—**The Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio.**



**UTILITY CRANE HAS ITS OWN POWER UNIT**—Self-powered Han-D-Crane can be towed by any prime mover. It incorporates counter-balancing with strong structural design, and is capable of lifting loads commensurate with weight of prime mover. Cradle Boom acts as high-strength arm.—**Construction Machinery Co., Waterloo, Iowa.**



**GREASE GUN REQUIRES ONLY ONE OPERATOR**—Heavy construction equipment is easily lubricated on the job with the Brown portable electric grease gun. Metering hand nozzle can be adjusted for various shots. Unit handles 25 lb of any weight grease. Thumb screw adjusts grease pressure from 500 to 12,000 psi. The Brown grease gun has a loaded weight of 230 lb.—**The Brown Grease Gun Co., Tuckaseegee Road, Charlotte, N. C.**

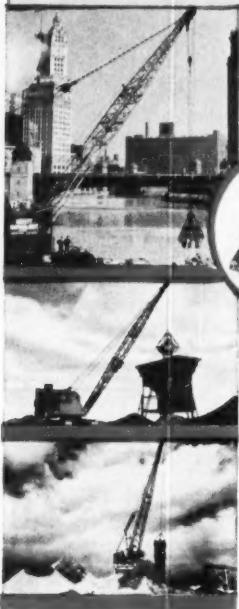
1947 1948 1949 1950  
*Everthing Points* *Forecast*

TO A BIGGER CONSTRUCTION YEAR  
 and MORE BOOMS with..

Owens will point

toward

NEW JOBS!



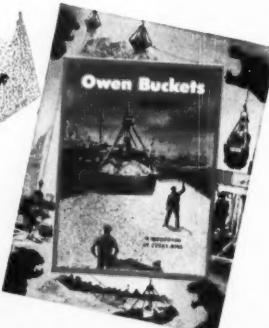
**T**ODAY, contractors can successfully cope with competitive bidders by equipping themselves with construction machinery that will "pay its own way" by doing more of better work in less time, with lower operating cost.

The "Performance Earned" top rating of Owen Buckets by progressive contractors everywhere is fortified by continued principles of sound design and rugged construction with highest grade materials.

OWEN builds buckets for each and every job requirement.

*GET THIS NEW CATALOG OF*

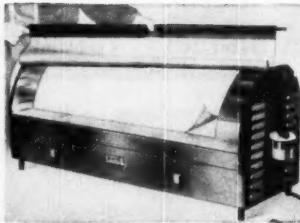
**Owen  
 Buckets  
 and Grapples**



**THE OWEN BUCKET CO.**  
 101 BREAKWATER AVE., CLEVELAND 2, OHIO

Branches

New York • Philadelphia • Chicago • Berkeley, Calif.

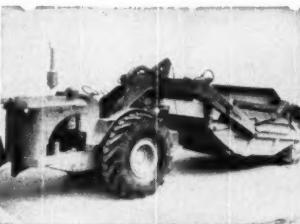


**LIGHTWEIGHT WHITEPRINTER**

—Spee-Dee Whiteprinter is now available in a 24x36-in. size. It uses the diazo (moist or ammonia dry) process to produce positive reading whiteprints, and accurate black-on-white or blue-on-white positive prints from transparencies or opaque originals. The Spee-Dee operates on 110-v ac circuits. It has a net weight of 58 lb.—Peck & Harvey, 5736 N. Western Ave., Chicago 45, Ill.

**ALL-ELECTRIC STEAM CLEANER**

—Electrically heated and powered steam cleaner is designed for use where gaseous or explosive mixtures are to be encountered. The Homestead-Younger unit mixes a constant amount of water with the desired amount of dissolved cleaning compound and pumps the mixture through a manifold where it is heated in progressive stages. At 100- to 120-lb normal operating pressure, the boiling hot solution and vapor are ejected from the cleaning gun in 60-gal-per-hr blasts. The units are available for any power circuit; and have a demand of 50 kw.—Homestead Valve Mfg. Co., Coraopolis, Pa.



**HIGH-SPEED EARTHOVERS**—

Two additions to its line of earth-moving equipment have been announced by LaPlant-Choate. The TS-200 Motor Scraper is a self-propelled rubber-tired high-speed earthmover with a 9- to 12-yd capacity. Powered by a Buda 145-hp diesel engine, it has a top speed of 23.44 mph with standard transmission. (An optional transmission provides a top speed of 27.4.) Steering and scraper controls are hydraulic. The TW-300 Motor Wagon has a 14-yd struck or 19-yd heaped capacity. It is powered by a Buda 225-hp diesel and has a top speed of 21.2 mph. Doors are hydraulically controlled. Tractor unit of the wagon is identical with that used with the TS-300.—LaPlant-Choate Mfg. Co., Inc., Cedar Rapids, Iowa.



145-h.p. Series F-8 Big Job, with special tandem rear axle, one of over 175 Ford Economy Truck models, has an allowable G.V.W. rating as a six-wheeler of 35,000 lbs.

## "We doubled tonnage...cut rock delivery costs about 33%" — SAYS H. B. GRAHAM, PUEBLO, COLORADO

**WHAT A TERRIFIC JOB** our nine Ford F-8 Big Jobs are doing on the Pueblo to Canon City highway," reports H. B. Graham.

"We have doubled tonnage per day over our previous trucks. And you should see our drivers scramble for a Ford when a new one is delivered. They think the new Fords are the greatest things that ever happened in trucking. I share that opinion because we've cut rock delivery costs about 33%."

*Ford trucks do more work!* They're Bonus Built with big reserves of strength and power to handle big loads. *Ford trucking costs less!* Volume production know-how results in low original price. Truck engineering know-how keeps operating costs low.

See your Ford Dealer today! Choose from over 175 models ranging from 95-h.p. Pickups to 145-h.p. Big Jobs. G.V.W. ratings from 4,700 lbs. to 22,000 lbs. There's a Ford Truck to fit your job and your budget. And, remember, Ford Trucks do more per dollar!"

### **Ford Trucking Costs Less Because—**

# **FORD TRUCKS LAST LONGER**

Using latest registration data on 6,592,000 trucks, life insurance experts prove Ford Trucks last longer!

### **SAVE WITH FORD!**

### **AMERICA'S NO. 1 TRUCK VALUE!**

- ★ **SAVE GAS** with Ford Loadomatic Ignition and High Turbulence combustion chambers.
- ★ **SAVE OIL** with Ford Flightlight aluminum alloy pistons. Cam ground for oil-saving fit at operating temperatures.
- ★ **SAVE WEAR** with pressure lubricated main and crankpin bearings. Double Channel frame, extra heavy duty axles, big brakes (up to 16-in. by 5-in.)
- ★ **SAVE ON REPAIRS** with demountable brake drums, brake inspection hole, engine-top setting of accessories, plus nationwide service from over 6,400 Ford Dealers.
- ★ **SAVE TIME** with Ford reliability and performance. The only eight-cylinder engines in trucking. Only Ford gives you a choice of V-8 or Six!

### **MAIL THIS COUPON TODAY!**

FORD Division of FORD MOTOR COMPANY

3230 Schaefer Rd., Dearborn, Mich.

Send me without charge or obligation, detail specifications on Ford Trucks for 1950.

FULL LINE    HEAVY DUTY MODELS    LIGHT MODELS    EXTRA HEAVY DUTY MODELS

Name \_\_\_\_\_ (Please print plainly)

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

# Welding Cuts Structural Costs 12% Saves 7% on Steel

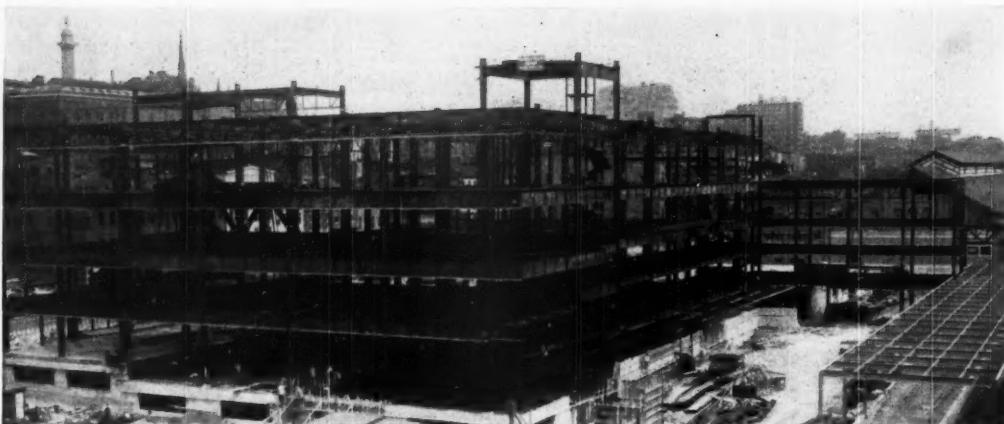


Fig. 1. Framework partially complete for the 5 story plant of Baltimore Sun, Baltimore, Md.

Architects: Palmer, Fisher, Williams and Ness;  
Consulting Engineer: Van Rensselaer P. Saxe; General Contractor: George A. Fuller Co.

By **VAN RENSSLAER P. SAXE**  
Consulting Engineer  
Baltimore, Md.

A SAVING of \$68,522 has resulted from the adoption of welded design for the publishing plant of the Baltimore Sun and Evening Sun shown in Fig. 1. Structural weight was cut by over 7%. A sizable amount of money was saved also on concrete and form work, as well as on reduced building

height made possible by continuous beam design involving shallower structural members.

Typical framework connections illustrating the simple details for field erection are shown in Figures 2-3. Beams are positioned on erection seats or clips and then field-welded with Lincoln® "Fleetweld 5" electrodes using 400 ampere Lincoln "Shield-Arc" motor driven arc welders. In the design of frame members, bevel cuts for connections were so planned as to make maximum use of fast, easy downhand welding.

The quotation of the low bidder for riveted construction was \$551,508. The actual cost of the welded frame was \$482,986. This accounted for the \$68,522 saving in the structure.

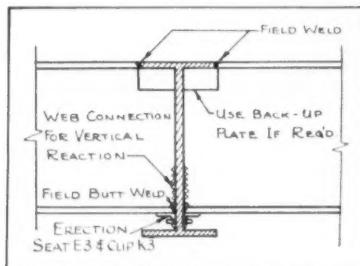


Fig. 2. Typical beam to girder connection.

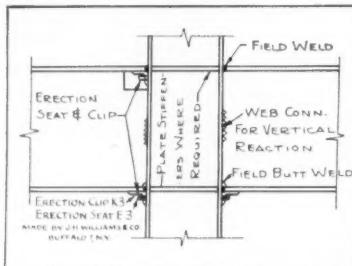


Fig. 3. Typical beam to column connection.

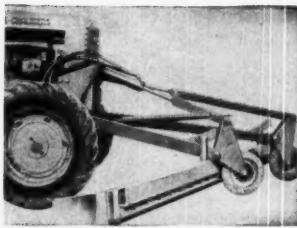
GET  
THE FACTS

Write for Studies in Structural Arc Welding

**THE LINCOLN ELECTRIC COMPANY**  
Dept. 173, Cleveland 1, Ohio

Sales Offices and Field Service Shops in All Principal Cities





**HYDRAULIC WINDROW ELIMINATOR**—Increases utility of Allis-Chalmers' Model D motor grader. As it is designed to recondition road shoulders in one pass by clearing off excess material which the grader moldboard piles up along the road's edge. Constant control is maintained because the eliminator rides on its own wheels, and blade settings are not affected by up and down movement of the grader. Unit operates off the grader's hydraulic system and can be raised or lowered to suit maneuvering requirements.—Tractomotive Corp., Deerfield, Ill.

**STEEL-HARDENING COMPOUND**—Powdered chromium-carbon material produces a carbonizing, nitriding, and chromizing action on tool steel resulting in a tough, uniform case. Hard-N-Deep is used with standard shop equipment — part to be hardened is heated to cherry red, dipped in the compound, brought back to temperature, and quenched. One treatment produces a case of about 1/32 in. Deeper penetration can be obtained by additional applications.—The Miracaloy Corp., 50 Broadway, New York 4, N. Y.



**SCOOP SHOVEL FOR BULK MATERIALS**—Scoop-Shovel accessory for Lift King and Worksaver fork trucks handles up to 27 ft of material. It tilts upward from horizontal scooping position to cradle load during transport, and tilts downward to discharge completely when dumping. It lifts loads to a height of 130 in.—Yale & Towne Mfg. Co., Philadelphia Division, Roosevelt Blvd. & Haldeman Ave., Philadelphia 15, Pa.



## Get **MORE** work done ... in **LESS** time ... at **LESS** cost with **FARQUHAR TROUGH CONVEYORS**

A Farquhar Trough Conveyor takes the place of several men . . . speeds up all materials handling . . . releases manpower from handling jobs to do more *actual construction work!* Contractors everywhere are saving *time, money, labor* with Farquhar Conveyors, moving wet concrete directly from mixer to work area without loss due to repeated handling. Farquhar Conveyors help you speed up your construction jobs . . . eliminate profit losses due to behind-schedule work!

### For All Handling Jobs . . . in All Industries

All through industry you'll find Farquhar Conveyors saving time, money and man-

power . . . handling sharp and abrasive materials with the same ease and efficiency as fine, powdery substances . . . and doing it *faster, better, cheaper!* Contractors, chemical plants, warehouses, department stores, all industries, turn to Farquhar for answers to their specific materials handling problems. Farquhar offers you a complete line of conveyors for portable, semi-permanent, or permanent use, to handle any and all kinds of loose or packaged materials, speed up handling operations, cut labor costs! Send for information now on the Farquhar Conveyor that can save you money!

### FREE INFORMATION

**A. B. FARQUHAR COMPANY**  
232 Duke St., York, Pa., or  
622A W. Elm St., Chicago 10, Ill.

Gentlemen: Please send me complete information on Farquhar Trough Conveyors.

Name

Firm

Address

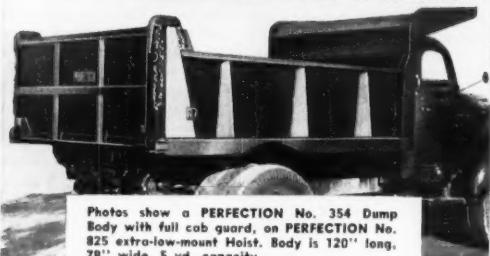
City  State

**Farquhar**  
**CONVEYORS**  
**SAVE YOU MONEY**

**HYDRAULIC PRESSES • FARM EQUIPMENT • FOOD PROCESSING AND SPECIAL MACHINERY**

**PERFECTION**  
(THE NAME TO REMEMBER)

**BODIES  
& HOISTS**  
for regular or  
**EXTRA LOW**  
mounting



Photos show a PERFECTION No. 354 Dump Body with full cab guard, on PERFECTION No. 825 extra-low-mount Hoist. Body is 120" long, 78" wide, 5 yd. capacity.

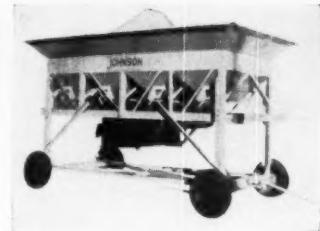
Write for Complete Information

**THE PERFECTION STEEL BODY CO.**  
GALION, OHIO, U.S.A.

**PERFECTION**  
STAKE and DUMP BODIES  
HYDRAULIC HOISTS



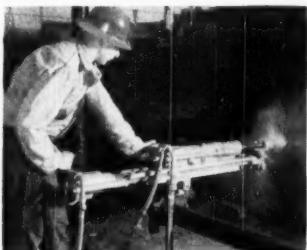
**FOR ANY TRUCK**  
STANDARD or SPECIAL UNITS  
IN ALL SIZES - FOR ANY USE



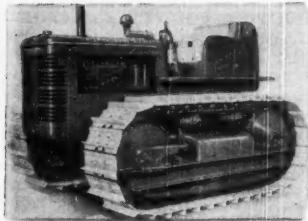
**RUBBER-TIRED TROLLEY BATCHER**—Pneumatic-tired wheel and two-bar assembly are latest advancements added to the Lo-Bin trolley batcher. This unit is designed with a maximum bin capacity of 30 tons and a low charging height of 9½ ft. With flared extension panels removed, the bins measure 7½ ft in height and hold 8 tons. Trolley batchers can be furnished to handle two, three, or four aggregates and efficiently serve 16-S, 11-S, and 6-S mixers.—C. S. Johnson Co., Koehring Subsidiary, Champaign, Ill.

**AUTO-REDUCTION TACHYMETRER**

—This instrument is designed for tachymeter work when quick performance of field work is more emphasized than reaching theoretically high accuracies. It permits both distance and difference of altitude to be read by a single reading of the rod; thus reducing tachymeter work to the simplicity of ordinary leveling. The auto-reduction tachymeter is similar to a repetition theodolite with these specifications: Horizontal circle with a 5-in. dia graduated through 360 deg in 1/12ths; 4.4-in. India vertical circle graduated through 360 deg in 1/6ths, with readings by line microscope to 1 min; telescope with a 9.6-in. focal length, internal focussing, and a magnifying power of 20.—Norbert Dienstfrey, 478 Water St., New York 2, N. Y.



**ROCK-DRILL MOUNTINGS**—Three power-feed mountings are announced for the Thor Model 82 and 92 drifter rock drills. They feature sliding cones which automatically double length of feed. The Model RF-96 has a total extension of 96 in.; the RF-48, 48 in.; and the RF-60, 60 in. An aluminum shell provides light weight. All three models are powered by an air motor.—Independent Pneumatic Tool Co., 175 State St., Aurora, Ill.



**IMPROVED TD-9 TRACTOR** — Higher power-performance ratings for the International TD-9 diesel crawler tractor include: Drawbar horsepower is upped from 38.88 to 40.5; horsepower at the flywheel to 51.5, an increase of 2; belt horsepower, from 45.91 to 48.5. Maximum drawbar pull in 1st gear (engine operating at maximum torque) is 11,400 lb, an increase of 1,150. Travel speeds are unchanged.—International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.

**AUTOMATIC ELECTRIC STEAM BOILER**—Electro-Matic steam boiler produces either small or moderate amounts of steam up to full 90-lb pressure. It can be used as a steam cleaner and will handle two cleaning nozzles. Tested for working pressures up to 150 lb, it will stand a 300-lb cold-water test. The new Siebring unit is available in 40-, 60-, and 90-gal sizes. Boiler hp depends upon number of elements. Each element of 10 kw develops 1 boiler hp. Boilers are furnished in sizes from 1/10 to 10 hp.—Siebring Mfg. Co., George, Iowa.



**ELECTRONIC PIPE DETECTOR**—Feature of Model 505 pipe detector is the use of a metal case to increase durability and to shield the loops and increase operation efficiency. The 505 can be used to locate pipes and cable, to trace their path, to center such pipes exactly, and to obtain an estimate of the depth. Location of services, stubs, and valve boxes can also be detected.—Detecon Co., 5637 Cahuenga Blvd., Dept. TT, North Hollywood, Calif.

## THE MORE RELIABILITY COUNTS THE MORE YOU NEED RED SEAL POWER

In choosing power equipment there are two things to keep in mind:

1. The closer the engine matches the job it has to do, the better its performance, and the lower your costs.
2. Whatever your specific need, there's a Continental Red Seal engineered to meet it—not approximately, but "right on the nose."

You'll find Continental in leading makes of construction and industrial equipment, powering generators, mixers, winches, hoists, cranes, and many other types of machines. Models range all the way from the six-cylinder overhead-valve S-6749—developing 141.3 h.p. for continuous duty—down to the  $\frac{3}{4}$ -1 h.p. air-cooled AC5, lately added to the line. Between these extremes, some 40 different models are available, built to

literally hundreds of specifications, to match them PRECISELY to the needs of countless different jobs. For maximum reliability, choose equipment with Red Seal power. And for separate power units engineered to your specific needs, see your Continental dealer.



PARTS AND SERVICE FROM COAST TO COAST

**Continental Motors Corporation**  
MUSKEGON, MICHIGAN



**PORTABLE FIELD OFFICE**—Packed steel buildings are erected without special tools or skilled labor. They are available in widths up to 24 ft, in any desired length, fabricated from steel or aluminum. Features include paneled gables and die-formed eaves, U-channel draw-type connectors, and complete in-

sulation. Side walls come in 8-ft wide sections, 6 or 8 ft high.—H. D. Campbell Co., Rochelle, Ill.

#### ADMIX METER FOR PAVERS

Metering device automatically measures a predetermined quantity of liquid air-entraining agent into concrete batch. It is designed for use on Koehring 16-E or 34-E Twinbatch Pavers, and is also suitable for use in connection with water batchers in ready-mix or central-mix plants. Entirely mechanical, movement of the paver skip actuates the meter.—Koehring Co., 3026 W. Concordia Ave., Milwaukee 16, Wis.

#### PLYWOOD-FORM CALCULATOR

Slide-rule calculator provides quick, easy specification-use data on proper plywood thickness and spacing and size of studs, wales, and ties, based on hourly rate of pour. Operated as a slide rule, the Keely Plyform Calculator computes for both vibrated or unvibrated concrete at both 50- and 70-deg temperatures. Included with calculator is a small folder listing design assumptions made in its construction.—Douglas Fir Plywood Assn., Tacoma 2, Wash.

**WACHS NATIONAL PIPE SAW**

*Tough Cuts*  
MADE EASY

Close quarters — only 14½" between 24" mains.

Two clean square cuts and the pipe comes out.

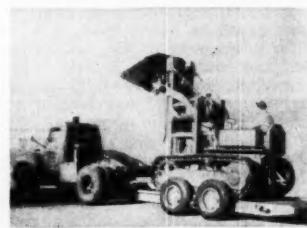
**MAKE FAST AND ACCURATE CUTS ON 10" TO 48" CAST IRON AND STEEL MAINS UNDER THE MOST DIFFICULT CONDITIONS**

- Minimum Pipe Line down time.
- Cuts under water in flooded ditches.
- No broken pipe, milled cut.
- Thor Air-Powered, no flames near pipe.
- Set-up time about 15 minutes.
- Portable — weighs only 265 lbs. Two men can carry and set up unit.
- Small excavation — only 14" clearance needed.
- One machine cuts all pipe sizes from 10" to 48".
- Only two adjustments necessary for size changes.

YEAR OUT TWO

Write today for descriptive folder and engineering data on this new labor saving saw.

**THE E. H. WACHS COMPANY**  
Family in business 6 years. Design and Manufacturing since 1883  
1525 NORTH DAYTON STREET CHICAGO 22, ILLINOIS



#### LOW-SLUNG TILTING TRAILER

Tilting-platform trailer measures 16 in. from ground to platform, permitting a high degree of clearance for low viaducts, telephone wires, and other obstructions. Other features of the Martin 333 Carryhaul include a low center of gravity and a lesser angle of incline which permits easier loading and unloading.—Martin Machine Co., Kewanee, Ill.

#### CONVEYOR SAFETY BACKSTOP

—Prevents backing up or running away of inclined conveyors, bucket elevators, and similar equipment. This ratchet-type unit automatically operates when power interruption, overload cutout, or failure of the prime mover occurs. It can be mounted in any position on the head shafts of conveyors or elevators.—The American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa.



#### HALFYARD TRACTOR SHOVEL

Payloader tractor shovel is now available in a  $\frac{1}{2}$ -yd size. The HE features full-reversing transmission, hydraulic brakes, full dumping clearance of 91 in., and hydraulic dumping. It can be used to dig, load trucks, grade, level, backfill, spread, and transport all types of materials.—The Frank G. Hough Co., 706A, Sunnyside Ave., Libertyville, Ill.



Laying 4 inches of Texaco Asphaltic Concrete paving, containing low-cost local aggregate, on State Highway 29 in Texas.



Applying a hot seal coat of 175-penetration Texaco Asphalt to the asphaltic concrete surface.



Crushed gravel, heated to 375°F, is spread and rolled into the asphalt seal coat.



Completed Texaco Asphalt pavement on 12 miles of Texas Route 29, constructed by J. M. Dellinger, Inc. of Corpus Christi.

## Road-building with Texaco in aggregate-poor areas

Along the Gulf Coast of Texas, the only local aggregate for highways is caliche, a relatively soft material, and sand. How these low-cost materials were used to construct 12 miles of state highway will interest road builders in other aggregate-poor areas.

For a sub-base, caliche was laid to a compacted thickness of 7 inches. Over this was constructed 4 inches of Texaco Asphaltic Concrete—caliche and sand plant-mixed with a 90-penetration asphalt. To compensate for the soft caliche, a seal coat of 175-penetration Texaco Asphalt was applied and covered with heated, crushed gravel, the only imported aggregate used.

The caliche sub-base was primed with Texaco MC-1 Cutback Asphalt. Tack coats of Texaco RC-2 Cutback Asphalt were applied between the three or four layers of asphaltic concrete.

Whatever your own road, street or airport paving problem, you will find an effective, economical solution in Texaco's complete range of Asphalt Cements, Cutback Asphalts and Slow-curing Asphaltic Oils. Refined from selected crudes, Texaco Asphalt products have helped construct and maintain America's highways for 45 years.

*Two helpful booklets on asphalt construction may be secured by writing our nearest office.*

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17  
Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Philadelphia 2 Richmond 19



# TEXACO ASPHALT

# BLAW-KNOX EQUIPMENT

## earns More Profit



There's a Blaw-Knox Portable Batching Plant in a size and type for every job, from paving highways to building big dams—2, 3 or 4 compartment Aggregate Batchers with 100 to 120 ton capacities—300 and 400 bbl. Bulk Cement Plants with combination arrangements to double these capacities.

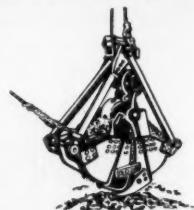


STEADY consistent production at lowest possible cost—that's Blaw-Knox performance that earns you profit on every construction job. Whatever your job—building big dams or bridges, small sewers or culverts, paving super-highways or Main Street—it will pay you to put your operations on a cost-cutting assembly-line basis with the Blaw-Knox "Complete Package" of construction equipment. It contains everything you need to solve your concrete problems, from material handling to finished slab, and includes Paving Forms, Subgraders, Central Mixing Plants and the Hi-Boy Trukmixer in addition to the equipment shown here. Write for complete details or see your nearest Blaw-Knox distributor.

# BLAW-KNOX

BLAW-KNOX DIVISION OF BLAW-KNOX CO., Farmers Bank Bldg., Pittsburgh 22, Pa.

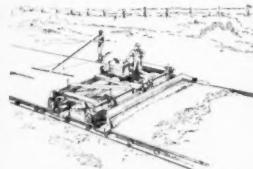
New York • Chicago • Philadelphia • Birmingham • Washington



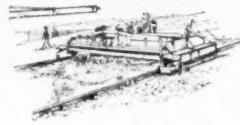
CLAMSHELL BUCKETS in a wide range of types and sizes for rehandling, trenching, dredging or hard digging.



CONCRETE BUCKETS speed work, cut concrete pouring costs. Built to handle huge quantities of low slump concrete.



FINISHING MACHINES assure highest quality of finish of concrete pavement regardless of the type of concrete mix specified or required.



CONCRETE PAVING SPREADERS automatically spread harsh, dry mixes of two 34-E dual drum pavers no matter where the concrete is placed on the subgrade.

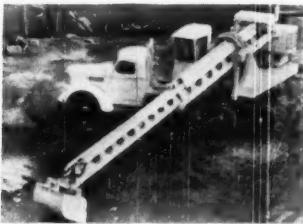


STEEL CURB AND GUTTER FORMS, a complete form system for every curb, curb and gutter, integral curb, special curb and sidewalk job.



### Look for These Next Month

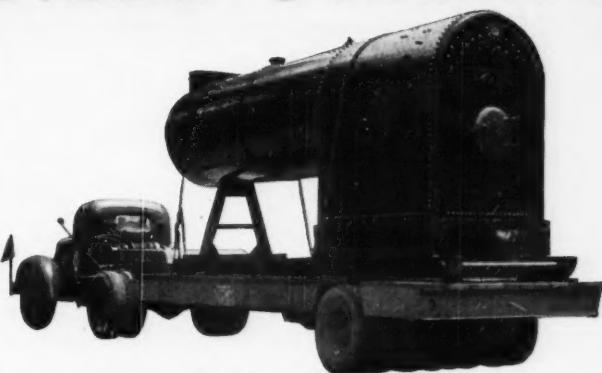
- **Road Paver** lays a concrete road "like squeezing toothpaste out of a tube." Eliminates the use of fixed forms in constructing concrete slabs.
- **Overhead loader**, mounted on crawler tractor, handles up to 6 yd of material per min.
- **Circulating heater** for tanks or tank cars of asphalt handles up to 1,000 gal per day.
- **Earth-fill tamping rammer** produces high-degree compaction in restricted areas.
- **Water-sprinkling tank** for soil-stabilization and related work is available in gravity or pressure types.
- **Jeep-mounted drill** augers holes with 3 to 12-in. dia, to depths of 100 ft, without the use of water.



**IMPROVED MODEL GRADALL**—New design refinements incorporated in the Gradall include: Width of circular roller path around main turntable has been increased; bogie-mounted pair of rollers has taken the place of each single tapered roller formerly used; hydraulic control valve manifold has been moved back adjacent to pumps at the engine permitting redesign of the operator's cab; a 2,000-lb counterweight at inboard end of main boom balances extended portion of the telescoping boom and increases its lifting capacity; and boom extension rides on five rollers. Appearance of the Gradall has been streamlined in the redesign process. The Gradall is now offered with a diesel power unit as optional alternate to a gasoline engine.—The Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

**PICK-UP-TO-DUMP-TRUCK KIT**—Conversion unit for changing standard pick-ups into dump trucks consists of picUPac hydraulic hoist conversion kit, the Convertor Constructor dump body, patented slip-in portable dump body, and the vertical hydraulic hoist. As no power take-off is required, unit can be operated manually from any location on the truck, or driven electrically from a cab-controlled Blackhawk pump. Lifting capacity of the picUPac is 6,000 lb.—Convertor Mfg. Co., Cambridge City, Ind.

# NEED STEAM?



LUCEY 104 H.P. 150 and 250 lb. W.P.  
Skid mounted with 24" oil burning base.

## LUCEY Inside Seal-Weld Double Calked BOILERS

1. 1040 sq. ft. heating surface.
2. 160 cu. ft. furnace volume.
3. Ample steam volume 54 cubic feet.
4. Oversize seamless firebox.
5. Butt straps calked and seal welded inside.
6. Four-inch water space around firebox.
7. Boilers available from 40 to 150 H.P.  
Working Pressures from 125 to 350 lbs.

Write for descriptive literature.



**LUCEY BOILER**  
and MANUFACTURING CORPORATION  
Chattanooga, Tenn.

SMOKE STACKS

• BREECHINGS • FLY ASH REMOVAL UNITS  
ASME UNFIRED PRESSURE VESSELS

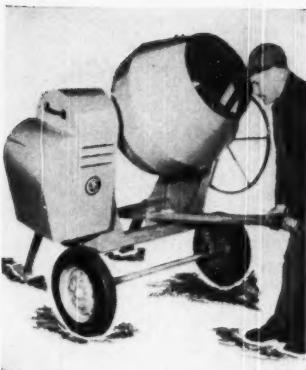
## Stang WELLPOINT SYSTEM

The Stang System has proved its efficiency and economy on both large and small jobs all over the United States. Stang engineering and supervision in planning, installation and operation insures a DRY JOB at all times.

For  
KNOW-HOW  
•  
ENGINEERING  
•  
SUPERVISION  
•  
EQUIPMENT  
•  
to keep jobs  
DRY

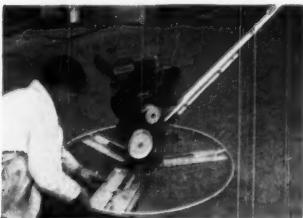
JOHN W. STANG CORPORATION  
2 Broadway 2123 S. 56th St. 8221 Atlantic Ave.  
New York 4, N. Y. Omaha, Nebr. P. O. Box 631, Bell, Cal.





**END-DISCHARGE TILTING MIXER**—Close coupling of drum-power mechanism is feature of the new CMC 3 1/2S end-discharge Wonder tilting mixer. Tilting mechanism has a convenient brake and large hand-wheel to minimize operator effort and provide control when positioning the balanced drum. Power is provided by an air-cooled gasoline engine. — **Construction Machinery Corp.**, Waterloo, Iowa.

**AERATED BULK-CEMENT TRAILER**—Air blown through an 18-in. non-movable belt permits unloading of bulk cement at angles as low as 4 deg. By combining aeration and hydraulic lift, the Gramm trailer permits unloading of dry powdered materials in unfavorable locations. Even weight distribution between trailer and tractor is achieved by use of the hydraulic lift principle. Trailer is easily converted to a fuel-oil transport for offseason hauling.—**Gramm Trailer Corp.**, Delphos, Ohio



**FLOAT FINISHING MACHINE**—Mechanical concrete-troweling machine produces a dense wear-resistant slab, free from ripples and depressions. Floating is performed with Snap-Ons flat float trowels, which can be installed or removed in a few seconds. For finishing, floats are removed and tool-steel finish trowels are employed. With the machine in motion on the slab, a turn of the control knob on the handle changes trowel pitch as desired. Available with gasoline-engine or electric-motor drive.—**Whiteman Mfg. Co.**, 3249 Casitas Ave., Los Angeles 26, Calif.

# CLEVELANDS



## Built to DELIVER ON THE TRENCHING JOBS

**GAS**  
**WATER**  
**DRAINAGE**  
**SEWER**  
**OIL**  
**CABLE**  
**CONDUIT**  
**GASOLINE**  
**BUILDING**  
**FOUNDATIONS**  
**IRRIGATION**



And CLEVELANDS will deliver on your jobs as they have on thousands of miles of trench in all parts of the world for more than 25 years. CLEVELANDS give you more and cleaner trench on more different kinds of jobs through correct wheel-type design and a wide range of transmission-controlled digging and crawler speed combinations. CLEVELANDS give you more actual working time through their tough all-welded construction that means less maintenance down-time and through their quick moves from job to job on truck or trailer. CLEVELANDS give you easy handling and remarkable maneuverability through hairline controls and perfect balance on a wide full-crawler mounting. And CLEVELANDS give you the guts and power to keep your trench out in front under the most punishing field conditions during more months of the year. See your local distributor today or write direct for the full story on how CLEVELANDS deliver **MORE TRENCH—IN MORE PLACES—AT LESS COST**

**THE CLEVELAND TRENCHER CO.**  
20100 ST. CLAIR AVENUE • CLEVELAND 17, OHIO



HIRE  
ONE MAN  
and get  
a crew  
with a COFFING  
SAFETY-PULL HOIST

One man with a Safety-Pull Ratchet Lever Hoist does the lifting, pulling, holding work of many — on the job or in the shop. Even the smallest Safety-Pull, weighing only 14 lb., delivers a 1500-lb. vertical or horizontal pull—is ready to go to work wherever hooked. Raising heavy structural members, lifting, shifting or servicing equipment—these are but a few of the jobs it handles easily, safely.

All Safety-Pulls are tested at 100 percent overload. Dual ratchet and pawl construction cannot slip—holds securely in any position. Choice of nine sizes with capacities up to 30,000 lb. Send for Bulletin D5SP.



Quik-Lift Electric Hoists •  
Hoist-Alls • Mighty-Midget  
Pullers • Spur-Gear Hoists  
• Differential Chain Hoists  
• Load Binders  
• I-Beam Trolleys

## COFFING HOIST COMPANY

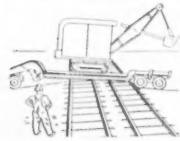
Danville, Illinois

## The ROGERS

### 4-FEATURE POWER-LIFT DEMOUNTABLE GOOSENECK



←  
STOPPS TO  
CLEAR LOW  
OVERHEAD  
OBSTACLES



←  
RAISES ITS  
DECK TO  
CLEAR HIGH  
BANKED  
CROSSINGS



Patents Pending  
EMBODYING A  
NEW AND VAL-  
UABLE FEATURE  
IN TRAILER  
SERVICE

It embodies the kind of versatility that makes every haul easier, faster, more profitable.

Loading, at a lower angle, is faster. Larger tires carry heavier loads legally. Unloading, reloading, detouring are avoided through quick adjustment of the deck height to different conditions encountered.

It's equally as rugged as the standard Rogers Gooseneck regardless of its detachable feature. And it's available on most Rogers Trailers and adaptable to many trailers of other makes.

Bring your equipment up-to-date and be in a position to handle operations more efficiently and more profitably.

Export Office: 50 Church St., N. Y. 7, N. Y. • Cable Address: "Brosites"

**ROGERS TRAILERS**  
EXPERIENCE builds 'em  
PERFORMANCE sells 'em  
ROGERS BROTHERS CORPORATION, 220 Orchard St., ALBION, PA.

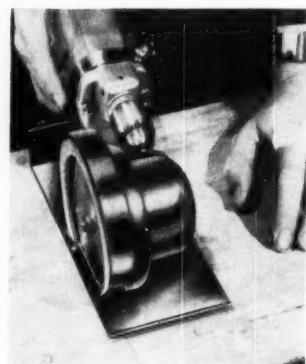


#### IMPROVED MOTO-BUG FOR 1950—

Large steering wheel on 1950-model Moto-Bug increases ease of handling and maneuverability. Steering gear ratio has been increased from 2:1 to 4:1. The Moto-Bug has a rated hopper capacity of 10 ft. or 1,200 lb. on the platform body. It is powered by a standard 4-hp gasoline engine and travels at speeds of 1½ to 4 mph, both forward and reverse.—Kwik-Mix Co., Subsidiary of the Koehring Co., Port Washington, Wis.

#### SECTIONAL SCAFFOLDING—

Basic unit employed in Bobst scaffolding is a sectional ladder with spaced ladder rungs designed as load-bearing members. Rungs are spaced 14 in. apart and the ladder sections are made 12 in. wide and 5 ft 10 in. high. Welded pilot plugs are used at the top of each sectional ladder so that each section is superimposed one upon the other and all are anchored together in true alignment. Ladders are cross-braced rigidly. Putlog trusses connect the ladders together transversely and these can be assembled for any type of service. The Bobst ladder-type scaffolding can also be used for shoring.—W.T.M. Mfg. Co., Ripon, Wis.



#### SAW ATTACHMENT FOR DRILLS

Attachment converts any 1/4-in. electric drill into a portable circular saw. A visual guide enables operator to see where he is cutting, while extra-wide shoe plate guides the saw and minimizes crimping. The Bull Saw can also be converted into a right-angle buffer-sander.—D. A. Bertram Engineering Co., 3121 Main St., Kansas City, Mo.

For Faster, Cleaner, On-the-Job Lubrication

# DESIGN YOUR OWN

## PORTABLE LUBRICATION DEPARTMENT

or specify a *Lincoln*  
Standard LUBROVAN\*



### AIR-MOTOR OPERATED DRUM PUMP ASSEMBLIES



Air-motor Operated, High Pressure 400-lb. Drum Pump — 40:1 Ratio; complete with Drum Cover, Tie Rod Assembly, and Hose.

### SPRING ACTUATED HOSE REELS

Accommodate up to 40 ft. of delivery hose. May be operated singly or in batteries. Counter-balanced action permits smooth, easy withdrawal of hose, and uniform speed of return.



### Select Complete *Lincoln* Power Operated Drum Pump and Reel Assemblies to Meet Your Specific Needs

Lincoln portable Lubrovans\* for on-the-job lubrication may be assembled in any combination of drum pumps and reels for dispensing chassis, trac-roll, gear lubricants and motor oil to meet your specific lubrication requirements.

This compact, ruggedly constructed equipment reduces lubrication time to a minimum — eliminates contamination and waste of lubricants — and makes it possible to keep equipment properly serviced at all times, thereby avoiding costly breakdowns, wear and loss of productive time.

With a Lincoln Lubrovan, no matter how far afield your equipment is working, every machine is assured faster, more efficient lubrication, at lower cost.

DISTRIBUTED NATIONALLY



Write for your copy of Lincoln's New Catalog No. 30 illustrating portable Heavy Duty Lubricating Systems for Contractors.

• • • PIONEER BUILDERS  
**LINCOLN**  
SAINT LOUIS  
LUBRICATING EQUIPMENT • • •

**LINCOLN ENGINEERING COMPANY** 5702-19 Natural Bridge Ave., St. Louis 20, Mo.

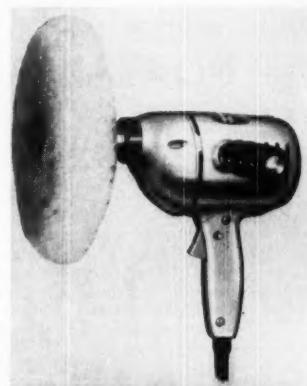
**PUMP-PROTECTING UNIT**—Prevents damage to pumps caused by running without discharging water. Protectrol automatically stops pump, and keeps it from starting, until manually reset, in event of mechanical failure, lowering of the water table, or any other cause for water not being discharged when pump is placed in operation. Emergency condition causes unit to energize audible alarm circuit and warning light.—**Automatic Control Co., 1005 University Ave., St. Paul 4, Minn.**

**BRICK-FACED CONCRETE BLOCK**—Concrete blocks are now available with a colored-cement brick facing applied in such a manner that the facing is an integral part of the

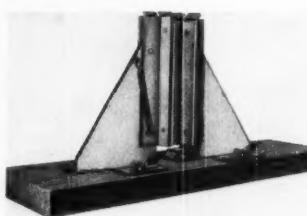
block. Bric-Blocks are available in any color or combination of colors, with a plain or rough brick facing, in all standard sizes. The Bric-Blocks are said to combine the beauty and durability of brick with the economy of block construction.—**National Bric-Block, Inc., Lindeke Bldg., St. Paul, Minn.**

**WATER METER FOR CONCRETE**—Auto-Stop meter automatically controls quantity of water used for concrete batches. It consists of a Model 432 register mounted on a Neptune liquid meter coupled with a quick-closing valve. Tripping mechanism is activated by buttons on the register. After delivery, the register is cleared by turning the reset handle. A total-

izer keeps cumulative totals. Flow can be stopped instantly at any time by pressing emergency stop button. Available in capacities from 30 to 100 gpm.—**Neptune Meter Co., 50 W. 50th St., New York 20, N. Y.**



**SEVEN-INCH JUNIOR POLISHER**—Designed for intermittent service in contractors' shops and garages, the 7-in Junior Polisher has a weight of 8 lb. It is a side-handle-type unit with a reversible handle for either right or left-hand use. No-load speed is 2,000 rpm. Side handle has a trigger switch with switch-locking pin for continuous operation. Available in 115, 220, 125, and 240-v models.—**The Van Dorn Electric Tool Co., Towson 4, Md.**



**UPRIGHT VISE FOR LARGE PIECES**—Heavy doors, windows, plywood sheets, and similar large, flat objects are easily worked upon when held securely by the Drop-Klamp. The edge of any flat object is slipped into the clamp, and is held firmly by the weight of the object. A fiberboard liner prevents marring of polished surfaces.—**Lakeshore Mfg. Co., 428-P 2nd Ave., So., Minneapolis 1, Minn.**

*Sorry . . .*

Through a typographical error in our March article detailing construction of the Johnson Wax research tower, John Halama was incorrectly called president. Mr. Halama is resident architect.

IT'S COST PER YARD  
... NOT CENTS PER POUND

Engineered  
**BUTLER**  
Design

**BUTLER BIN**  
COMPANY

949 BLACKSTONE AVE.  
WAUKESHA, WIS.



Bucket holds 10 cubic feet . . . 18 with sideboards



Mechanically dumped . . . operates by foot pedal



9-square-foot steel platform takes half-ton loads



Climbs 20% grades fully loaded



50-inch steel blade makes Prime Mover an efficient snow plow

#### FEATURES:

- gear driven . . . no belts or chains
- fully enclosed engine protected against dirt and moisture
- clutch, engine, transmission all run in oil
- switch from bucket to platform without tools . . . in less than a minute
- turns in its own length (63½"); width 31½"
- 3-gallon tankful of fuel gives 8 hours continuous service

MADE BY

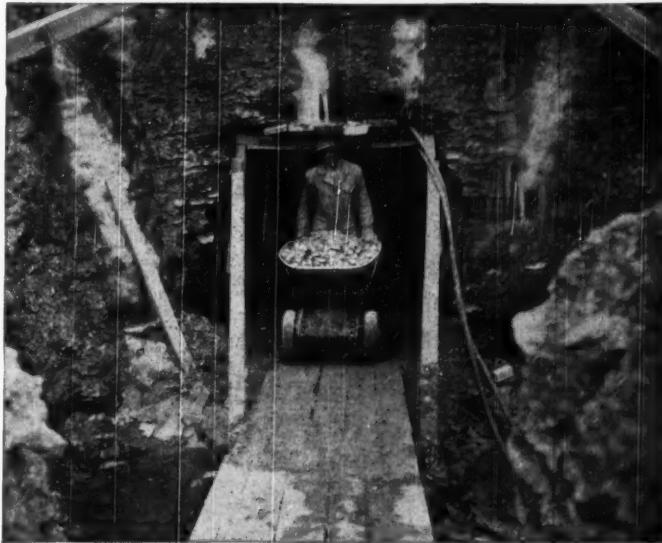
THE PRIME-MOVER CO.  
MUSCATINE, IOWA

\*Patents & T. M. Reg. Pending Copyright, 1949

# The BELL Prime Mover

## - eliminated cars, track, and skip hoist on tunnel job at Wright Field

**VEST & BARTELL**, Cincinnati contractors have discovered that Prime Movers not only save time and manpower, but frequently substitute for costlier equipment. This was clearly demonstrated on a 4'x5' rock tunnel beneath the gun range at Wright Field. Here Prime Movers functioned right in the tunnel itself . . . hauling broken rock out of the tunnel and up a steep ramp to the surface, and from there to a disposal dump several hundred feet away.



- Combining the features of a giant motorized wheelbarrow, a 9- or 14-square-foot platform truck, and a powerful snow plow, the Bell Prime Mover is an ingenious answer to the problem of cutting costs and reducing labor on construction projects.

With Prime Movers on the job . . . pouring concrete and doubling the productive capacity of wheelbarrow or "buggy" gangs . . . work can be expedited on almost any job. You can take some of the guesswork out of figuring labor costs, for Prime Mover savings provide a cushion against increased labor rates.

All of these facts can be proved conclusively by an on-the-job demonstration. *It took only half an hour at one of these demonstrations for a contractor to sideline six concrete buggies in favor of two Prime Movers on a 160-yard*

*pour. Two men finished the job in 7½ hours.*

If you would like to see a Prime Mover . . . or a "fleet" of them in action, we'll gladly make the arrangements. For more information, please attach this coupon to your letterhead and mail it to us at once.

#### SEND COUPON NOW

THE PRIME-MOVER CO.  
Muscatine, Iowa

Please send me facts on the Bell Prime Mover. Who is the nearest distributor?

Name.....

Address.....

Company.....

City, Zone & State.....

makes  
the  
**TOUGH  
JOBS**  
easy



## *McCarthy* MOBILE-MOUNT VERTICAL DRILL FOR BLAST HOLE DRILLING

McCarthy Vertical Drills are compactly designed for truck, half-track or caterpillar mounting. They adapt to any job where soft rock formations are to be removed, and their tough, simplified construction means bigger profits through reduced drilling costs and increased drilling speeds.

McCarthy Drills are equipped with plenty of power and finger-tip controls. They're easy to set up and easy to move about.

See your McCarthy Dealer today or write us direct for complete information. Our 48 years of experience can mean vastly increased profits for you.

Makers of  
Drilling Equipment  
Since 1901



**THE SALEM TOOL CO.**

765 SOUTH ELLSWORTH AVE.  
SALEM, OHIO, U. S. A.

**PHOTO-COPYING DEVICE** — The Contoura is a compact photographic copying device designed particularly for copying bound material. This is made possible by a pneumatic cushion which conforms the photographic paper to the contour of the material being copied. Can be used to copy opaque or translucent originals, or translucent material with subject matter on one side only. A mirror on the Contoura simplifies reading reversed negatives produced by the reflex method. Exposed sheets are developed by standard photographic processes. Light is obtained from any 120-v circuit.—F. G. Ludwig Associates, Pease Road, Woodbridge, Conn.

**ALUMINUM INSULATION** — Infra Type 6 consists of three tough, permanently separated metals and two flame-, mold-, and vermin-proof fiber partitions. It is designed for installation in ceilings and floors, between beams, steel girders, or trusses; under concrete floors and ceilings; over concrete slabs; and under or over radiant-heating panels.—**Infra Insulations, Inc.**, 10 Murray St., New York, N. Y.



**ONE-YARD EXCAVATOR** — Power shovel-crane, rated in the 1-yd class, features a Twin-Disc hydraulic coupling as standard equipment. Plate clutch permits stopping machinery without stopping the engine. Diesel engine is standard, with a gasoline engine available as optional equipment. The TL-50 can be used as a shovel, crane, clamshell, dragline, or hoe. Four crawler mountings are available.—**The Thew Shovel Co., Lorain, Ohio.**



## **RUEMELIN BLAST GENERATORS**

A practical low-cost sand blast used by plant engineers for maintenance work. Cleans rust, paint, scale from piping, valves, fittings, renovating buildings, stripping paint from trucks, busses, trailers, railroad cars, structural steel, storage tanks, ship hulls, etc. Can be fitted with Wet Adapting Nozzle for eliminating dust.



•  
Write  
for  
Bulletin  
36-B  
•

**RUEMELIN  
MFG. CO.**

3911 N. Palmer St., Milwaukee 12, Wis.  
Manufacturers and Engineers  
**SAND BLAST AND DUST COLLECTING  
EQUIPMENT, WELDING FUME COLLECTORS**

**GRiffin**  
**R**  
**I**  
**F**  
**F**  
**I**  
**N**  
**WELLPOINT  
SYSTEMS**  
**JETTING  
PUMPS**  
**Distributors**  
**GRiffin**  
**ENGINEERING CORP.**  
**2016 E. Adams St.,**  
**JACKSONVILLE, FLA.**  
**GRiffin**  
**EQUIPMENT CO., INC.**  
**548 Indiana Street,**  
**HAMMOND, INDIANA**

**GRiffin WELLPOINT CORP.**

881 EAST 141st ST. • NEW YORK 54, N.Y.  
Phone: MElrose 5-7704-5-6

## NEW EQUIPMENT BRIEFS

**Dual-purpose steel post** serves as a temporary or permanent support column. An integrated jack is used to make periodic height adjustments during early stages of construction. Maker: The Akron Products Co., Seville, Ohio.

**Continental Motors** announces two small air-cooled engines—the AC-5 developing  $\frac{3}{4}$  to 1 hp; and the AC-6 developing 1 $\frac{1}{2}$  hp.

**Low-hydrogen electrode** eliminates under-bead cracking. The P&H (Harnischfeger Corp.) line includes 14 different types.

**Masonry and rock drills** in two types are announced by Kennametal, Inc., Latrobe, Pa. The Tri-Point rock drills for drilling granite, sandstone, concrete, etc., have cutting triangular-shaped tips made of vacuum-sintered cemented carbide. The twist-type masonry drills, featuring vacuum-sintered cemented carbide blade have an angled cutting point to eliminate motionless dead center, and faster spiral for cleaning dust out at an accelerated rate.

**Steel Tape-Rules** (Lufkin Mezurall and Wizard Jr.) now have chrome-clad non-glare satin-finish blades. These chrome-clad blades absorb disturbing light reflections and afford easier reading of all markings and graduations.

**Vinyl plastic coating** can be applied to wood or metal by brush, spray, or dipping. Calvoseal is a variation of Calvinac created particularly for concrete, masonry, asbestos shingles, plaster, and similar surfaces. Maker: James Lithgow Co., Inc., Los Angeles 22, Calif.

**Fractional-hp motor**, Model 1100, is brush-type unit with a 1/20-hp intermittent duty and 1/25-hp continuous-duty rating. Maker: Electric Motor Corp., Racine, Wis.

**Motorless pressure sprayer** for paints, disinfectants, and other liquids has a 2 $\frac{1}{2}$ -qt steel container with a lid which holds a hand pump for building up pressure in the container. Lid of the NoMotor sprayer is tested for pressures to 150 lb. Maker: NoMotor Corp., Cincinnati, Ohio.

**Power plane for woodworkers**, Model 101, has a maximum cutting width of 1-13/16 in; operates at 20,000 rpm; weighs 8 lb; and has an adjustable apron which permits bevel cuts from 0 to 25 deg. Motor is interchangeable with Porter-Cable's Guild Router.

# ... Get Facts **NOW** on BANTAM CRANE

- Lifts up to 10,000 lbs.
- Mounts on new or used truck
- Drives anywhere, any-time... without hauling delays
- Fast, mobile, rugged
- Easily converted to dragline, clam, pile drive, trench hoe or shovel

## Why pay more?

New low-cost Bantam crane will easily handle over 70% of your construction-type lifting jobs at a big saving in time and overhead. Travels city streets, back road bridges, or cross country... goes into tight spots where big rigs stop. Unloads trucks... spots steel... lifts pre-fab sections, pipe, poles, tanks, etc... gets more work done per day, at higher net earnings for YOU. Write for free literature describing this new money-making Bantam, with 6 interchangeable front end attachments.

Load truck only  
**\$4865\***

with cab truck  
**\$6215\***

plus mounting

\*Above prices F.O.B.  
Waverly, Iowa, are  
subject to change  
without notice.

### TEAR OFF and MAIL THIS HANDY COUPON NOW!

SCHIELD BANTAM CO.  
221 Park St., Waverly, Iowa

Have Bantam  
Distributor call

Send free literature on Bantam Cranes. I am especially interested in (attachment) for (application)

Name

Occupation or type of business

Address

City  State

**SCHIELD BANTAM**

**The THRIFTY machine with the BIG earning range**

**Lightweight air-cooled engines** developing 2 hp (Model K7-1) and 3 hp (Model K12-1) are now available from the Kohler Co., Kohler, Wis.

**Air and hydraulic cylinders** for medium-duty service utilize a tierod construction to give positive protection against leakage at joint of tube and head. Maker: Leedeen Mfg. Co., Los Angeles 15, Calif.

**Safety innersole** is puncture proof and designed to fit into any conventional work boot or shoe. It consists of a leather innersole, special spring-steel plate, and rubber-frictioned cotton duck. Maker: Rubberhide Co., Inc., Trenton 4, N. J.

**Tractor-tire remover** features long handle which gives leverage needed to break the bead under extremely tough conditions. Maker: BeeLine Co., Davenport, Iowa.

**Ten-inch quick-change gear lathe** is in production in four bed lengths. A complete line of tools and attachments is available. Maker: South Bend Lathe Works, South Bend 22, Ind.

**Speed clip for fastening insulation**, asphalt shingles, rolled roofing, and plasterboard to wood surfaces has a broad, flat head which simplifies driving and affords a large surface for maximum holding. Barb on each

side of the taper prevents loosening. Speed Clip (Tinnerman Products, Inc., Cleveland, Ohio) is produced for insulation 1-in. thick.

**Engine-driven arc welder** and power plant is available as stationary or portable unit. For welding, unit handles all ac or ac/dc electrodes from 1/16 to 3/16 in. It delivers 200 amps of welding current. For power, machine provides 3 kw or 110/220-v ac 60 cycle single-phase current. Maker: Miller Electric Mfg. Co., Appleton, Wis.

**Quick-disconnect coupling** in 6-in. pipe size is designed for heavy-duty applications. A 40-deg turn makes or breaks the connection. Maker: Roylyn, Inc., Glendale 3, Calif.

**Leather hand pads** provide maximum protection and comfort in handling brick, tile, metal sheets, and other uses where hand injuries are a risk. General Scientific Equipment Co., Philadelphia 32, Pa., supplies the Safti-Mitt Handpads.

**Multiple V-belt** has a 40-percent increase in horsepower rating over comparable sizes of standard V-belts. The Goodrich belt is also available for use where dissipation of static is essential.

**Two-wheeled pick-up cart** can be used for hauling and dumping concrete, for general light-duty carrying tasks and similar uses. The Gardner is balanced for easy handling. Front tilts to ground for easy loading or unloading. Maker: Inland Steel Products Co., Milwaukee 1, Wis.

**Selective-speed Gearshift** drive consists of a combination integrally mounted motor and a 4-speed transmission having both primary and secondary gear reductions. Maker: The Lima Electric Motor Co., Lima, Ohio.

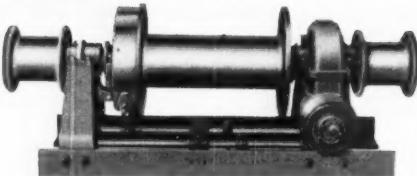
**Portable traffic signal**, manufactured by Peters Metal Products Co., Hawthorne, Calif., is non-electric, completely automatic and portable. Operating on a 24-hr spring-wound motor, the device employs a revolving drum lettered "stop," "go," and "caution." It has an adjustable stand with a maximum height of 7 1/2 ft, a minimum of 4 ft.

**Close-coupled steam turbines** have integral reduction gears for low-speed applications. The Type E turbine is manufactured by Westinghouse.

**Floor magnet** has low-clearance handle to permit picking up chips from under low obstructions without stooping. The Magnetool is unloaded by means of a neoprene wiper ring which pushes parts to a non-magnetic area at either end. Maker: Multifinish Mfg. Co., Detroit 7, Mich.



FOR THE BIG LIFT . . .  
**TULSA WINCH!**  
The All-Purpose Winch



Tulsa Winches, truck-mounted, are being successfully used in construction for erecting, pulling heavy equipment, hauling, loading and unloading supplies. Now available for every truck, 1/2-ton and larger. Write for bulletin. Tulsa Winch, Div. of Vickers, Inc., Dept. CM-5, 817 E. 1st, Tulsa, Okla.

**Tulsa Winch**  
TULSA, OKLAHOMA  
DIVISION OF  
VICKERS INC.



## YOU CAN TAKE IT WITH YOU

Any time you build a road just to transport sand, stone or other materials from quarry or dock to the job, you are making an unnecessary, expensive investment. Not only is it expensive—but once the job is done, you can't take it with you.

There's another kind of highway—a better kind of highway. It's a Hewitt-Robins belt conveyor system, like the one in the picture . . . the longest "roller coaster" in the world. Over seven hilly miles it stretches (here it parallels an old roadway) to move the 4,000,000 tons of limestone needed to build Arkansas' great Bull Shoals dam.

There are many advantages in belt conveyors like these, especially

in rough country. There are no roads to build and maintain. No tracks to be laid. Grades can be mastered. Rivers, roads and valleys can be bridged. And when tunnels are inevitable, you provide a passage, not a highway.

*Best of all, when the job is completed, you can—and do—take it with you!*

Hewitt-Robins builds belt conveyor systems for moving bulk materials of every kind, above and below ground. They range from standard sectional conveyors for average and above-average needs, to multi-mile installations like Bull Shoals.

Hewitt-Robins is the only organization equipped to handle the entire

job . . . engineering, conveyor machinery and belting—to take single, unified responsibility for a successful Belt Conveyor installation.

It will pay you to consider belt transportation on your next job. Let us go over facts and figures with you. Inquiries will receive prompt, experienced attention. Write Robins Conveyors Division, Passaic, N. J.

**HEWITT-  
ROBINS**  
**BELT CONVEYORS**

**HEWITT-ROBINS**  **INCORPORATED**

BELT CONVEYORS (belting and machinery) • BELT AND BUCKET ELEVATORS • CAR SHAKEOUTS • DEWATERIZERS • FEEDERS • FOAM RUBBER  
PRODUCTS • FOUNDRY SHAKEOUTS • INDUSTRIAL HOSE • MINE CONVEYORS • MOLDED RUBBER GOODS • RUBBERLOK ROTARY WIRE  
BRUSHES • SCREEN CLOTH • SKIP HOISTS • STACKERS • TRANSMISSION BELTING • VIBRATING CONVEYORS, FEEDERS AND SCREENS

Matched for

# RECORD BREAKING PERFORMANCE



**A rugged, tough combination  
— built to give you bigger  
output at lowest possible  
cost per yard . . . under  
all operating conditions**

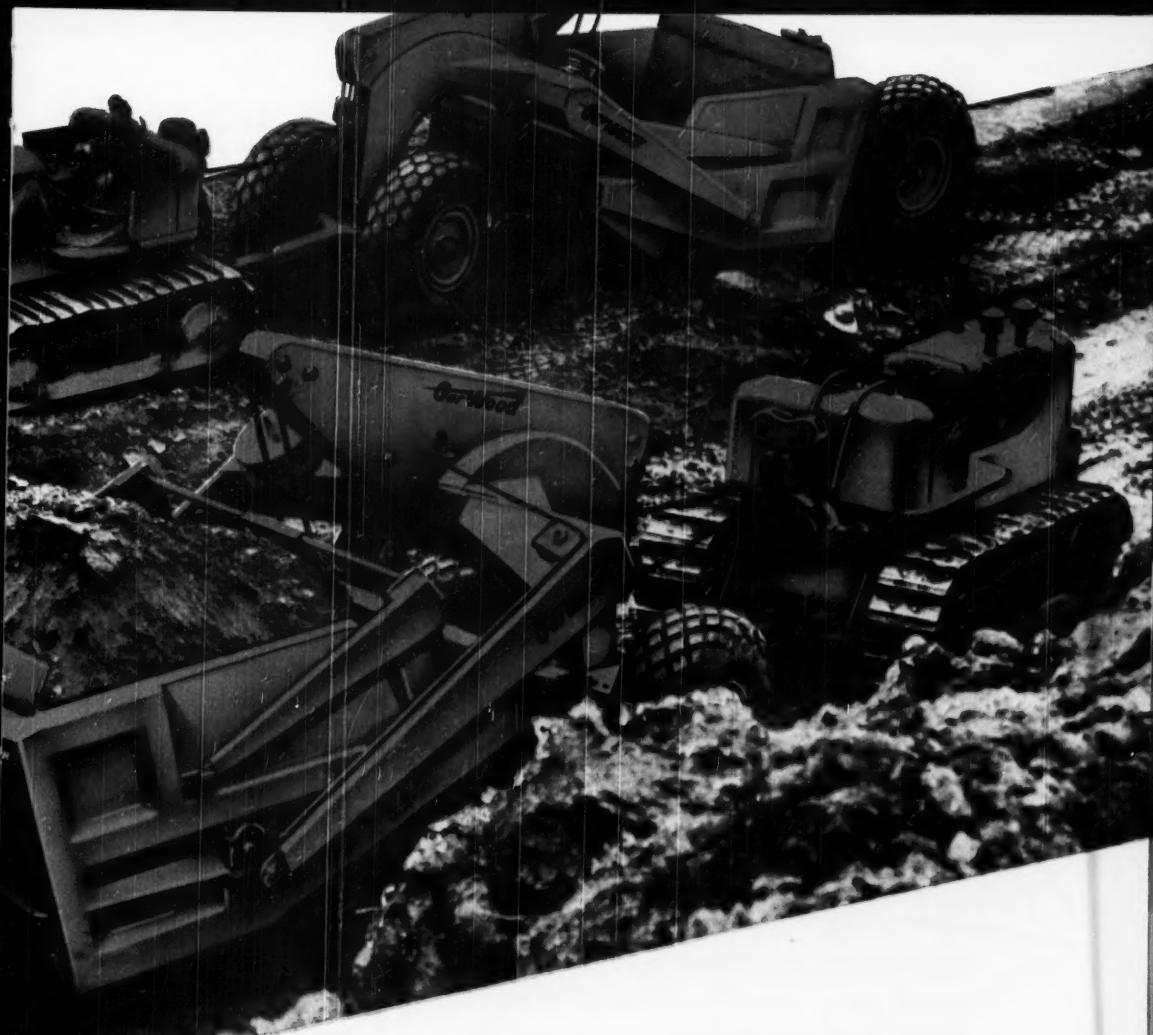
#### ALLIS-CHALMERS HD-19 TRACTOR

- 40,000 lb.
- 163 hp. at flywheel.
- More traction, more ground contact, better balance.
- Hydraulic torque converter drive — eliminates most shifting, provides smooth, cushioned performance.
- Infinite number of speeds in only two gear ranges — 0 to 3 mph. in low and 0 to 7 in high.
- Simplified servicing and maintenance . . . reduced lubrication . . . easier operation.

#### GAR WOOD 625 SCRAPER

- 24.5 cu. yd. heaped capacity; 19.2 cu. yd. struck capacity.
- Open bowl design.
- Forced, controlled ejection.
- High clearance and low center of gravity.
- Extra strength throughout — plenty of beef where needed.
- Exceptionally wide apron opening.
- Live boiling action that distributes dirt into both bowl and apron.
- Large tires for greater flotation.

**"Seeing is Believing." Ask your Allis-Chalmers Dealer for a Demonstration.**



**NOW!** completely new easy, loading and dumping  
GAR WOOD MODEL 625 SCRAPER . . . built to take full  
advantage of the greater working ability of the big,  
powerful, smooth operating **ALLIS-CHALMERS HD-19**  
**Hydraulic Torque Converter Tractor**

**ALLIS-CHALMERS**

TRACTOR DIVISION

MILWAUKEE 1, U. S. A.

Originator of the **Torque Converter Tractor**

FOR GREATER PRODUCTION . . . FOR EASIER OPERATION . . . FOR SIMPLIFIED SERVICING.

# FIRST WITH MANUFACTURERS...

## J-M INDUSTRIAL FRICTION MATERIALS

are specified as original equipment by  
most manufacturers of  
earth-moving equipment.



# FIRST WITH OPERATORS...

Operators who want to keep maintenance costs low know that **JOHNS-MANVILLE FRICTION MATERIALS** are easy to wear in, hard to wear out.

If Johns-Manville materials are right to start with... they must be right to stay with. When you order replacements, remember that Johns-Manville says "stop" and "go" to more tonnage than any other friction materials... see your Johns-Manville Friction Materials distributor or write Johns-Manville, Box 290, New York 16, New York.

**Johns-Manville**  
INDUSTRIAL FRICTION MATERIALS  
No. 1 With Leading Manufacturers



**Pressure-fed hand paint brush** is fed through a hose connected to the handle eliminating constant topping and dipping into a paint pot. Maker: Hanlon & Goodman Co., Belleville 9, N. J.

**Hydro-Power injector** saturates a controlled amount of air with water vapor and injects this mixture into the manifold after carburetion resulting in lowered fuel costs, increased performance, reduced pre-ignition, reduced carbon deposits, and longer engine life. Maker: Hydro-Power Mfg. Co., Denver, Colo.

**Colorless silicone product** has high penetrating properties providing concrete, masonry, cement blocks, and brick protection against moisture and water. Invisible Raincheck is produced by Protection Products Mfg. Co., Kalamazoo, Mich.

**Solid wood platform** (15x20 in.) is designed for hanging from rungs on ladders. Can be used as a step, scaffold hanger, tool rack, and similar uses. Maker: San Francisco Scaffold Co., San Francisco 24, Calif.

**Self-propelled compressors** are announced in two new models. The Schramm Pneumatractor is now available in 60- and 105-cfm sizes.

**Multi-purpose grease** permits use of one grease and one grease gun for complete lubrication of construction equipment. Litholine is produced by Sinclair.

**Carbolyt-tipped saw blades** permit longer use between sharpenings. These Skilsaw blades are available in 7-in. dia with 18 teeth and 8-in. dia with 20 teeth.

**Power-operated hoist** and follower plate, adapted for use with a materials pump, handles materials that will not seek their own level. Maker: Alemite Division of Stewart-Warner Corp.

**Automatic water system** is standard equipment on all new Worthington-Ransome 34E dual-drum pavers. The system is designed to simplify operation of the paver and to assure a more uniform mix. System goes into operation when skip is approximately 4 ft off the ground.

**FM 2-way pack radio** incorporates a 16-tube receiver and an 8-tube transmitter into a compact 19-lb radio station that can be hand or back carried, or used as a semi-fixed installation. The Motorola set is designed for operation in either the 25-30 mc band or the 152-174 mc band.

**Are-welding electrode** is designed for producing fully machineable welds on cast iron. General Electric's W-2075 can be used in all positions on either ac or dc.

## New PUBLICATIONS From MANUFACTURERS

The catalogs and bulletins reviewed below will keep you posted on latest developments in construction equipment and materials available for your use

**STEEL-FRAME CONSTRUCTION**—Motion-picture tells the story of steel-frame construction of modern buildings showing fabrication and erection processes. It depicts fire protection, safety, strength, and other features of this type of construction. It is printed on 16-mm full-color film and has a showing time of 25 min.—**American Institute of Steel Construction, Inc., 101 Park Ave., New York 17, N. Y.**

**WELDING REGULATORS**—Pressure regulators for welding, cutting, special flame processes, maintaining gaseous pressures in electrical equipment, and other operations where controlled gas pressure is required are described in a 32-p. catalog. More than one hundred regulators are described in this catalog, with 26 of them illustrated. One section is devoted to a description of regulator adapters and pressure gages, another to flow and pressure charts.—**Air Reduction Sales Co., 60 E. 42nd St., New York 17, N. Y.**

**BALL AND ROLLER BEARINGS**—Detailed catalog and engineering data book covers line of ball and roller bearings. Book 2550 lists important construction features; prices, weights, load ratings, and important dimensions; how to select the proper bearing; interchangeability of Series DE roller bearings with bearings of other makes; and other important data. Other sections of the book are devoted to welded steel base plates, lubrication fitting data, maintenance and lubrication, shafting, and manufacturing facilities.—**Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.**

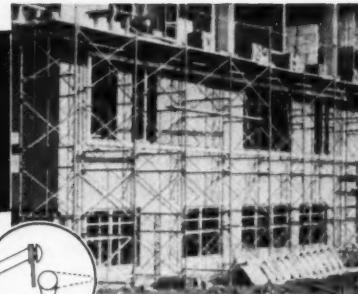
**TARPAULINS**—Winter-weight tarps, in thirteen sizes, are listed on a new data sheet. The Penguin tarps are available in three weights and are especially recommended for winter use. The data sheet lists several features claimed for the tarps, and lists the sizes in which they are available. Also described on this data sheet are the Danco oil salamanders, canvas wall stripping, and a cotton-duck utility bag.—**C. R. Daniels, Inc., 4900 Block Wetheredsville Road, Baltimore 16, Md.**

**ADVANCE**  
tubular steel  
**SCAFFOLDING**

**CONVENIENT to Erect  
because of the  
patented CAM LOCK**



The cross braces in ADVANCE Scaffolding have self-contained Cam Locks which secure them instantly to the panels by a flick of the wrist. No bolts, nuts, clamps, toggle pins or tools are needed. ADVANCE Scaffolding is the most convenient and fastest to erect and dismantle. Every item is 100% reusable.



**Safety is Built in**  
The panel girts on ADVANCE scaffolds are reinforced. Every lift of panels is attached to the underneath tier by self-contained stack locks.

*Write for literature  
and name of your local  
distributor*

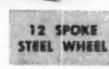
**BEAVER ART METAL CORPORATION**  
1204 Factory Ave.  
Elwood City, Pa.

**SELECT A**  
**Sterling**  
**THAT FITS YOUR JOB!**



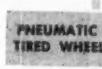
**TUBULAR  
STEEL FRAME**

(Above)  
Model S-3 Maximum Capacity 3 1/2 cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Steel channel legs. V-shaped front braces and brace support.



**12 SPOKE  
STEEL WHEEL**

(Right)  
Model S-19 Maximum Capacity 5 cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Heavy-duty malleable wheel guard.



**PNEUMATIC  
TIRED WHEEL**

**IMMEDIATE  
SHIPMENT**



**WOOD HANDLE  
BARROW**

There's a Sterling Barrow for every type of hauling job, whether it's dry, bulky materials like sawdust or heavy industrial loads like castings or steel parts. Also special barrows for brick, tile, coal, concrete block and similar materials. All barrows are scientifically designed, well balanced and sturdily constructed for a long service life. Choice of wood handles or tubular steel frame, steel wheels or pneumatics. Write for new Sterling Wheelbarrow Catalog No. 61.

STERLING WHEELBARROW CO., Milwaukee 14, Wis.

Look for this Mark of  
STERLING Quality

**Sterling**  
**WHEELBARROWS**



**SUCTION AND WATER HOSE COUPLINGS**—Bulletin No. 5 describes the complete line of Le-Hi suction and water hose couplings. New items shown for the first time include brass suction and water hose couplings which use a hexagon swivel nut in place of the usual pin plug; petroleum couplings; and fire-hydrant reducer couples.—**Hose Accessories Co., Lehigh & 17th St., Philadelphia 32, Pa.**

**PLATFORM STEP FOR LADDERS**—Data sheet describes E-Z Tread platform step for extension ladders

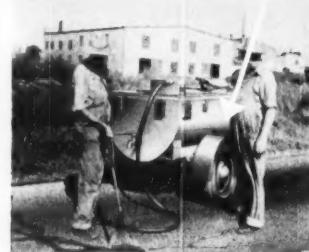
and how these treads help eliminate fatigue and overstrained muscles, provide better balance and increased safety, and other advantages said to accrue through their use. Lists strengths, ladders they will fit, and how they are attached.—**J. E. McKinley Co., 549 Crescent Ave., Glen-side, Pa.**

**PUMPS**—Two pump catalogs are announced by Byron Jackson. Bulletin 49-6600 describes the VMT pumps designed for handling liquids, hot or cold, corrosive or non-corrosive, where the net positive suction head

is limited. Capacities range to 1,000 gpm at heads up to 250 psi, and with standard materials, for temperatures up to 250-deg F. Larger sizes can be furnished. Bulletin 49-9400 describes the standard line of vertical self-priming pumps. These are especially recommended for unwatering operations and similar applications where a self-priming pump is needed. It is available in five pump case sizes, with capacities ranging from 600 to 4,000 gpm at heads up to 500 ft.—**Byron Jackson Co., Pump Division, Terminal Annex, Box 2017, Los Angeles 54, Calif.**



**TEAM UP THIS STANDARD STEEL S-J WITH A STANDARD STEEL TAR KETTLE FOR LOW COST/ROAD MAINTENANCE!**



#### **STANDARD STEEL TAR KETTLES**

✓ You get three separate operations from Standard Steel Tar Kettles. (1) Hand operated spray assembly; (2) Motor operated, and (3) Gravity Draw off for bucket work. Uniform heat throughout mass of material eliminates "cold spots" or "burnt materials." Team up an "S-J" and a Standard Steel Tar Kettle and you can handle any repair work or secondary construction at less cost—less work—with less investment in equipment. Write for Catalog "TK".

#### **STANDARD STEEL "S-J" for SECONDARY CONSTRUCTION**

✓ Whether used for construction of playgrounds, driveways, parking areas, or for patching, sealing, shoulder repair or crack filling, Standard Steel "S-J" works fast—economically—efficiently.

**SAVES WORK**—a special "SUCK BACK" element cleans spray bar instantly after shutting off flow of material.

**NO DELAYS STARTING**—pump and entire piping system is instantly drained after completing a job—eliminating freezing and loss of time on starting next job.

**SAFETY**—Gravity Draw off on curb side protects operator.

Write for Catalog "S-J" for Further Details

#### **OTHER PRODUCTS**

Asphalt Pressure Distributors, Patch Rollers, Supply Tanks, Tool Heaters, Asphalt Tools, Street Flushers, Construction Brooms and Aggregate Spreaders.

SJ6

*Built to the Highest Standard*

**Standard Steel Works** NORSH KANSAS CITY MO.

**MOVIE ON BLUEPRINTING**—Educational film, "The Print Before the Product," tells the story of making blueprints and other reproductions. The film shows actual shop practices; the inner workings of some lesser-known processes; and the making of cloth-tracing reproductions, blow-ups, film negatives, and planographs. This sound-and-color 16-mm film has a running time of 35 min.—**International Assn. of Blue Print & Allied Industries, 506 S. Wabash Ave., Chicago 5, Ill.**

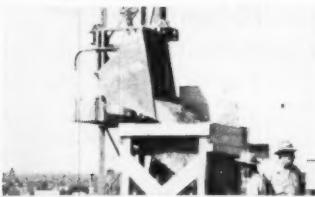
**LUBRICATION EQUIPMENT**—How to keep construction machinery properly serviced at all times is the subject of Lincoln Catalog 30. It illustrates and describes compact mobile lubrication departments to meet any requirement, shows how to reduce lubrication time to a minimum, and how to eliminate contamination and waste of lubricants.—**Lincoln Engineering Co., 5702-54 Natural Bridge Ave., St. Louis 20, Mo.**

**INDUSTRIAL SAFETY EQUIPMENT**—Catalog (64 pp) lists a line of eye and respiratory equipment, plus a fund of technical and reference material. This has been included to help user select proper type and style of equipment for specific hazard involved, and to provide information on use and care of the equipment. Charts throughout the catalog show at a glance the comparative features of various styles and aid in selection of most comfortable style for the user.—**Willson Products, Inc., Reading, Pa.**

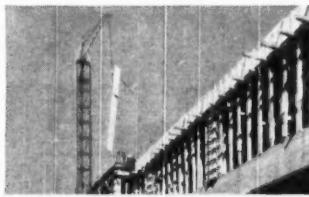
**CONCRETE-TEST CYLINDERS**—All metal molds for compression tests of concrete cylinders are described in this 4-p. folder. The Moline cylinders are made in 6x12- and 8x16-in. standard sizes, with special sizes available on order. The bulletin lists eight features claimed for the molds, and shows four photographs illustrating their use.—**Moline Iron Works, Moline, Ill.**



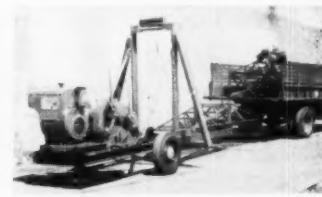
6' x 6' Platform Easily Lifts Two Concrete Buggies



AUTOMATIC-DUMPING CONCRETE BUCKET carries a full half-yard load. Switches from bucket to platform by pulling four pins.



BOOM ATTACHMENT with 9-foot radius handles bulky materials with crane action. Does not interfere with operation of bucket or platform.



TRAILER WHEELS permit moving from job to job without dismantling. Entire unit with 47 ft. tower weighs only 5100 lbs.

## American Hoist & DERRICK COMPANY

St. Paul 1, Minnesota

Plant No. 2: SO. KEARNY, N.J.

Sales Offices: NEW YORK • PITTSBURGH • CHICAGO

# QUICK

"on the uptake" . . . with  
platform, bucket or boom

Just one kind of speed isn't good enough, today. You need an elevator that gets to the job site in a hurry . . . one you can erect in a matter of hours (instead of spending a lot of time and money on a timber tower) and one that *works fast*.

That's the American Portable Material Elevator. It moves from job to job at truck speed. Assembles in jig time. Raises its own tower. Stands 47 feet high without guying—or up to 90 feet guyed. Moves to different locations on the job without dismantling. And lifts loads *up to 2500 pounds at 90 feet per minute!* Operates boom attachment independently.

Rent or buy it from your American Hoist distributor. For literature, mail the coupon below.

2 American Hoist & Derrick Co. • St. Paul 1, Minn. 5252

● Please send catalog on Material Elevators.

Name \_\_\_\_\_

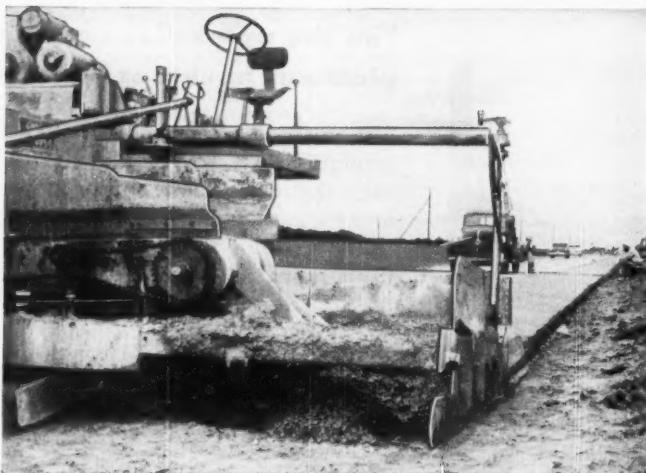
Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_ State \_\_\_\_\_

# CUT WIDENING COSTS



## NO FORMS REQUIRED

Widen roads with concrete (as shown here) or bituminous mix and do away with costly forms. The versatile APSCO also handles up to 3" base paving material, gravel, etc. It means real saving! The wise contractor uses APSCO equipment — wideners, base pavers, trench rollers. Send for free full line catalog!

**THE ALL-PURPOSE SPREADER CO.**  
FULLER ROAD - ELYRIA, OHIO

**ELLICOTT**  
**DREDGES**

ANY TYPE  
ANY SIZE  
ANY SERVICE

Only Ellicott offers: 65 years of experience in dredge building; a complete line in all sizes; undivided responsibility — your dredge is designed, built and delivered under one contract.

Write for catalog: **ELLICOTT MACHINE CORPORATION**  
1605 Bush St., Baltimore 30, Md.



**TECHNICAL DATA IN LOOSE-LEAF FORM**—Essential data of engineers and students covering mathematical subjects, chemical tables, metals, etc., are available in loose-leaf form. This condensed information is prepared in pocket-sized binders for immediate reference to necessary data. Free catalog contains complete information and list of titles.—**Lefax, Inc.**, 9th & Sansome, Philadelphia 7, Pa.

**SIX - WHEELERS**—Tandem - drive units for various types of 6-wheelers are described in a broadside prepared by Timken-Detroit. The bulletin lists types of 6-wheelers, and types and design features of Timken-Detroit tandem-drive units. The bulletin is replete with photographs and drawings used to illustrate the text matter.—**Timken-Detroit Axle Co.**, 100 Clark, Detroit 32, Mich.

**CHEMICAL-RESISTANT COATINGS**—Folder describes the W&W line of chemical-resistant coatings. It contains valuable information on applications for maximum chemical, moisture, and rust resistance for all metals, concrete, and wood.—**The Wilbur & Williams Co.**, Greenleaf & Leon Sts., Boston 15, Mass.

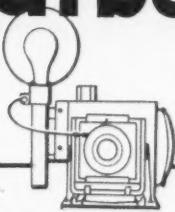
**RUBBER CONVEYOR BELTING**—Installation, care, and maintenance of rubber conveyor belting are described in this pamphlet. Subjects covered include splicing, cold-patch and heat-vulcanized minor repairs, all types of major repairs, and other important belting facts.—**Carlyle Rubber Co., Inc.**, 64 Park Place, New York 7, N. Y.

### Concrete-Form Erection Explained in Color Movie

AN INTERESTING FILM illustrating erection of concrete forms is now available. Entitled, "Uni-Forms in Action", it covers all phases of the subject. The film shows the basic components of the Uni-Form system, illustrates how they are joined together to form any size or type structure, and highlights advantages accruing through their use. A feature of the film is on-the-job photographs taken at several projects in which the Uni-Forms were used. These illustrate the problems involved, as well as showing the degree of adaptability possible with these forms. Printed on 16-mm color film, the picture is available for showing to contractors, contractors' supervisors and employees, engineering schools, and others interested in concrete construction. Full details are available by writing: Universal Form Clamp Co., 1238 N. Kostner Ave., Chicago 51, Ill.

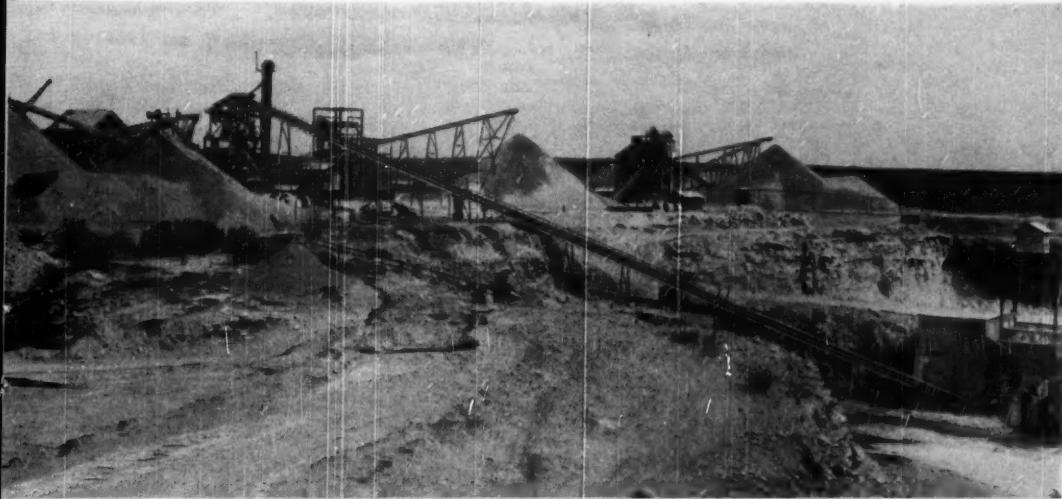
# Barber-Greene

## Photo-News



PRINTED IN U.S.A.  
217M-AM-4/6

ON-THE-JOB VIEWS AND COST-SAVING IDEAS • VOLUME 1 • NO. 1



Extensive use of cost-reducing belt conveyors is evident in this view of Uvalde Rock Asphalt Company's plant.

850115

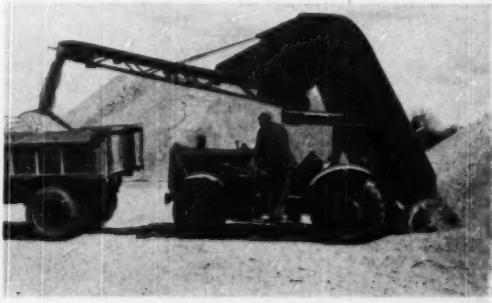
## MINES 6 MILES OF ROAD PER DAY

Every day from 3,000 to 4,000 tons of processed rock asphalt are produced by the Uvalde Rock Asphalt Company out in Blewett, Texas—enough to put a 1-inch top course on 6 to 7 miles of road. This impressive production achievement is made possible largely through the use of belt conveyors that handle all the material through processing operations to the various stock piles. B-G Belt Conveyors are ideally suited to this type of operation, where relocation is frequently necessary. They are easily disassembled, relocated and reassembled as conditions dictate.



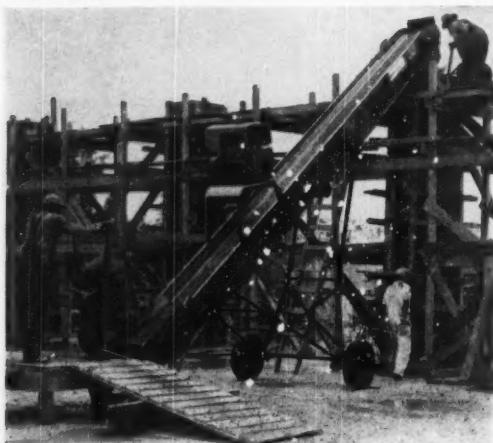
849395

**HISTORICAL SITE FOR TURNPIKE PLANT.** A modern B-G belt conveyor system identifies Pennsylvania Aggregate's Cornwall plant which is located on famed Cornwall Banks—site of one of the world's greatest mines—oldest continuously operated in the new world. The two-century accumulation of limestone—eight million cubic yards—is being processed for use by various Turnpike contractors.

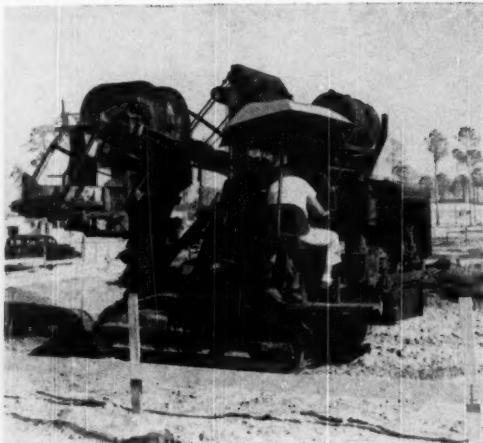


850100

**NEW LOADER HAS LONG REACH.** Longest, highest trucks, trailers—even railroad cars—are loaded to full capacity at a 3 yd./min. clip by the B-G 543 Loader. Hydraulically controlled conveyor swivels to trim load, eliminates spillage or partly filled trucks. The 543 travels at 15 m.p.h. on its tractor-type chassis is easily convertible to a 7-11 yd./min. snow loader to give year 'round service.



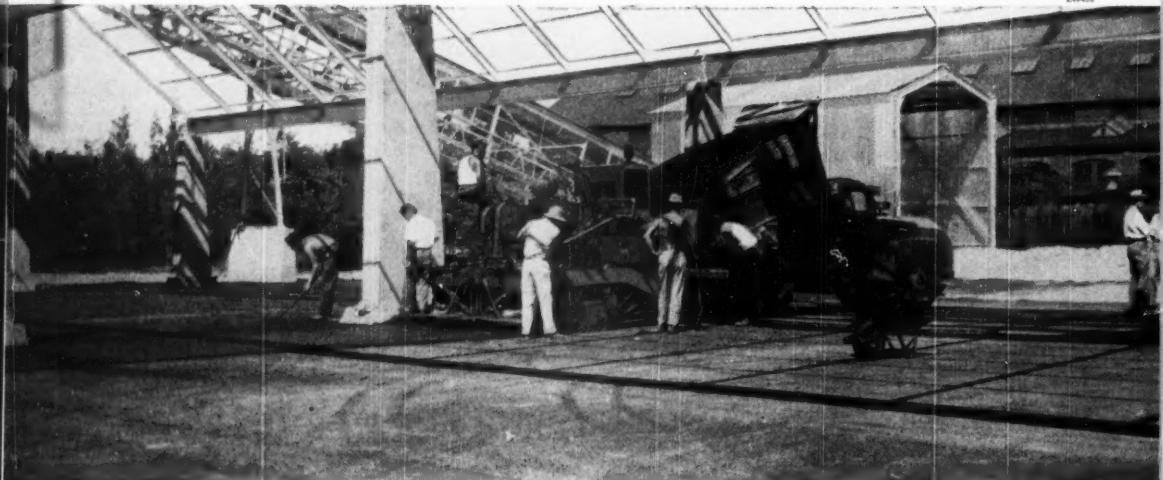
**WET CONCRETE GETS A LIFT.** Another example of the broad variety of work that can be done by B-G portable conveyors came up on a recent H. A. Dailey Company job near St. Louis. A number of 16-foot columns were poured by Dailey's B-G portable—eliminating costly ramps and scaffolding, allowing simple buggy loading. The job was done quickly at lowest cost by this portable Barber-Greene which, incidentally, was towed all the way from Aurora, Illinois, to the job, over 250 miles. Portability like this pays off on job after job.



**"AT HOME" IN MIAMI SUBDIVISION.** Digging footings by hand in tough coral rock is an expensive operation that's avoided by such Florida contractors as the Clinton Construction Company in Miami. On a large subdivision project recently, all footings were dug by their B-G ditcher on an "efficient and economical" basis. Coral rock, caliche, frozen ground—even bituminous pavement—pose no problem for B-G Vertical Boom ditchers. Their "milling action" enables them to cut through toughest material, leaving a clean-bottomed, smooth wall trench.

## INSIDE JOB By a Smooth Operator

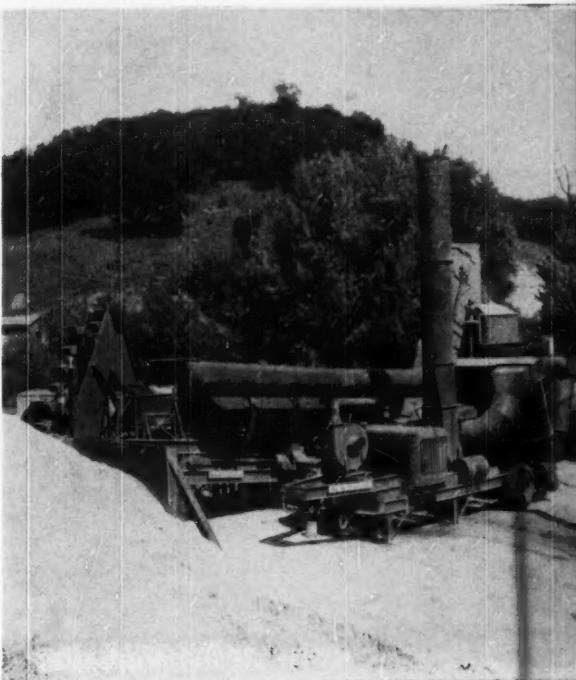
When the state of New Hampshire decided to improve the footing and reduce adulteration by surfacing the floor in its Concord coaling base shed, a B-G finisher owned by The Manchester Sand and Gravel Company took over the job. In the shed area, which was restricted by several rows of I-beam roof supports, it maneuvered smoothly to place 500 tons of material with a minimum of hand work required for finishing. The base and binder course were laid the length of the building, and the final sheet asphalt course was laid at right angles to them. Result: a smooth, weatherproof surface at lowest cost.



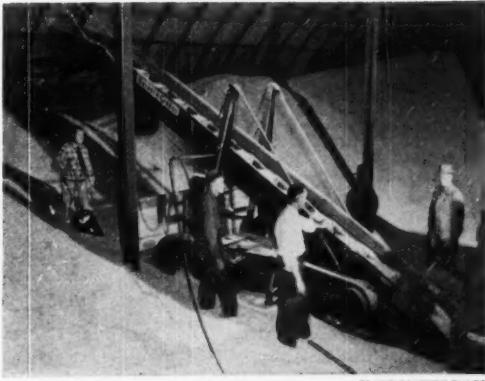
*for full, fast information on any equipment*

## A NINE-YEAR-OLD MAKES GOOD IN NEW CAREER

Back in 1941 a B-G Travel Plant mixer started its working life with Rein and Schultze, Wisconsin road builders. Today, nine years and many hundreds of miles later, this original Travel Plant forms the nucleus around which the owners have built a highly efficient single aggregate plant. With a B-G Dust Collector and low pressure burner Dryer, this setup produced 120 tons of mix per hour in recent work on Wisconsin Highway 71. Future plans involve the possibility of adding a gradation unit for producing multiple aggregate hot mix. Barber-Greene long-term sturdiness combines with Barber-Greene flexibility to greatly extend and prolong the usefulness of B-G asphalt mixing equipment.



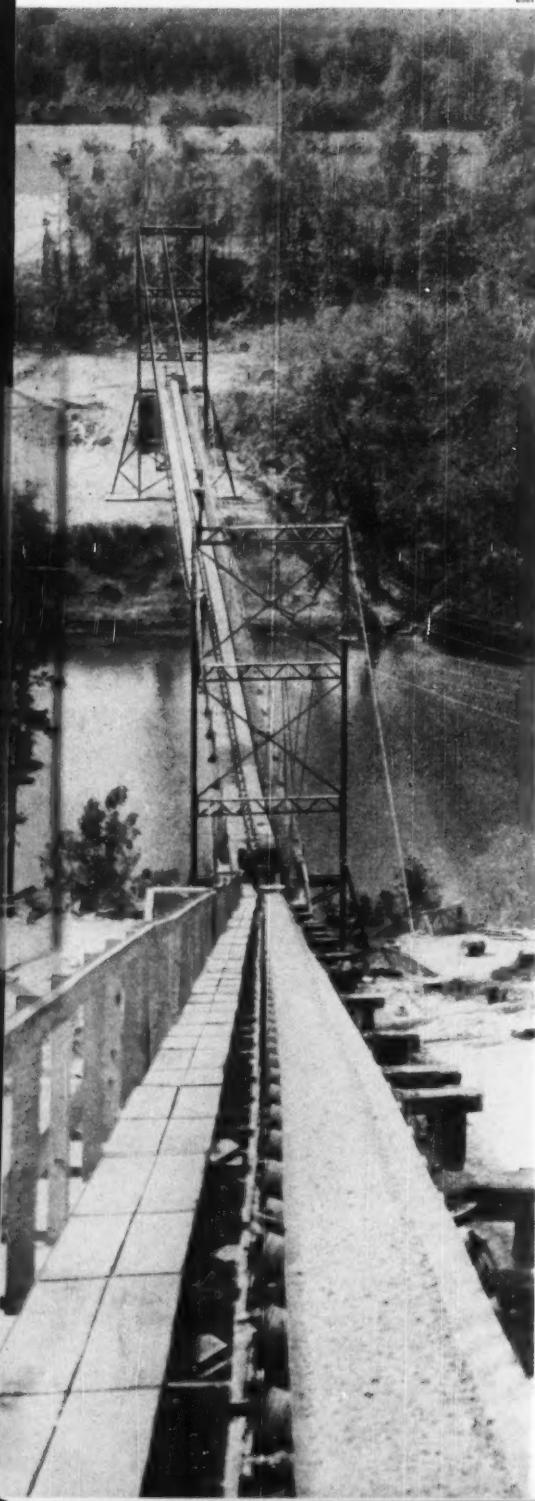
**REMIND YOU OF LAST WINTER?** Communities where snow took its toll last winter—in lost parking meter revenue, traffic and business interruptions and the like—should plan now to be ready next year to minimize these losses and to cut the cost of clearing snow quickly. The new Barber-Greene Model 544 is within the budget of small communities. It travels at 15 miles per hour—and loads up to 11 cubic yards a minute, keeps trucks on the move with a minimum of manpower. An added asset: it can be converted to an all-material, 3 yard-per-minute truck loader for summer use at little cost other than for exchanging the bucket lines. Other B-G Snow Loaders with capacities to 20 cu. yd./min.



**NEW TWIST FOR A "GOOSENECK."** The versatility of a B-G Gooseneck Loader eliminated the need for extra investment in machinery for the Farmers Elevator Co. of Mason City, Ia. For with the problem of cutting costs in loading, unloading and reclaiming coal, they needed mechanical help in storing over 55,000 bushels of corn. Their B-G "Gooseneck," along with its coal business duties, handled this job—loading storage bins at a rate of 300 bushels in 20 minutes. The exclusive "Gooseneck" design of this Barber-Greene—which minimizes degradation when handling coal—was an asset in handling seed corn as it helped prevent damage to the kernels.

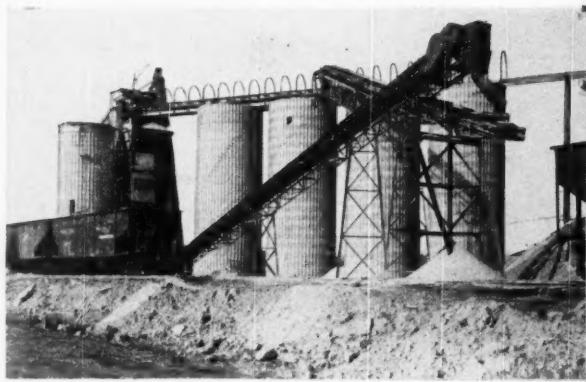
GLOBE-GAZETTE PHOTO

*on these pages--see your B-G Distributor*



# IT'S A BRIDGE— FOR AGGREGATE ONLY

When your sand deposit is on one side of a navigable stream and your plant and railroad facilities are on the other, you have a problem similar to that one faced by Becker County Sand and Gravel Company in Fayetteville, North Carolina. Their solution: a unique bridge with 55-foot clearance carrying a 408-foot B-G belt conveyor, and another B-G conveyor that takes the sand and gravel to the washing and screening plant. Currently, this company is moving around 25 cars per day from this plant—another "special" problem solved through the use of standard, pre-engineered, easy-to-install Barber-Greene belt conveyors.



**TRIPLE PLAY BY WELL-KNOWN TEAM.** From siding to silos via B-G hopper-car unloader and B-G transfer and shuttle belt conveyors is a fast, low-cost trip for materials used by Imperial Redi-Mix Company in their plant at Melrose Park, Illinois. Mechanized "push button" handling with this unloading-storing team reduces the manpower requirements to a minimum.

#### SERVICES THAT PAY—MORE THAN THEY COST

There is much for you to gain in calling upon your Barber-Greene distributor for help in solving problems involving the handling of all materials . . . mixing and placing bituminous surfacing materials . . . as well as ditching and snow removal. Your B-G distributor and his sales and service representatives have been through intensive training courses at the Barber-Greene factory. They know how to apply Barber-Greene equipment to assure the most in performance on your job—they know how to show you the best in maintenance practice. Further, your B-G distributor has service and repair part facilities you can depend upon through the years. For complete information—bulletins, specifications and prices on any or all Barber-Greene equipment—get in touch with your B-G distributor or call, write or wire directly to the address below.



**Barber-Greene Company**  
AURORA, ILLINOIS, U. S. A.

**NON-CLOG PUMPS** — Bladeless sewage-and-trash pumps are illustrated and described in this 16-p. catalog. Details of construction of the pump are featured—with special emphasis on construction of the single-passage bladeless impeller. Both horizontal and vertical types are listed in the bulletin. Engineering data cover principal dimensions and tables for selecting a pump for any required operating conditions.—Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

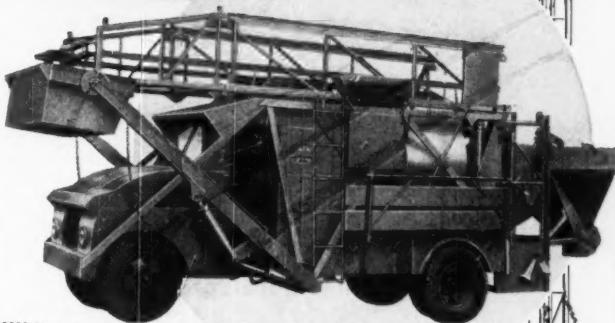
**EARTH-BOARING EQUIPMENT** — Horizontal, directional earth-boring equipment is described in this 4-pager. The bulletin lists the features of the Ka-Mo equipment, shows several illustrations of it in use, and lists complete specifications for the component parts. Information is provided on operation of the drill.—Ka-Mo Tools, Inc., 2121 S. Troy, Chicago, Ill.

**WATERPROOFING COMPOUND** — Instructive booklet explains handling and use of Anti-Hydro compound. This material is said to provide 100% waterproofing for concrete materials, build hardness and strength into monolithic concrete floors, and plug leaks in concrete against water pressure. It is also recommended to provide hard non-dusting floor toppings, bond new mortars and concrete to old, prevent freezing of concrete and masonry at temperatures to 15 deg F, and to patch and repair old floors.—Anti-Hydro Waterproofing Co., 265 Badger Ave., Newark 8, N. J.

**DETACHABLE DRILL BITS** — One-use throwaway drill bits adaptable to all rock-drilling applications are described in 4-p folder. This folder describes the bit, tells how it is used and what it will do, and lists recommended uses. The bulletin also describes preparation of the drill rod, lists the types available, and describes packaging, field and engineering service, and purchasing information.—Calumet & Hecla Consolidated Copper Co., Calumet, Mich.

**INSULATED PIPING SYSTEMS** — Technical data books illustrate and describe the manufacture, construction, and installation of various types of Ric-Wil insulated piping. Technical data on piping systems and available Ric-Wil services are also included in Section 480.4. Catalog Section 480.5 contains fully illustrated technical data and specifications on all phases of insulated piping—its structure, properties, and installation procedures.—The Ric-Wil Co., Dept. J-1, Union Commerce Bldg., Cleveland, Ohio.

## CONCRETE MIXING and POURING ON THE JOB!



5000-lb. scale  
weights aggregate  
batch in skip.

Shown here ready for travel.  
A Complete Mobile Concrete Mixing  
Unit and Elevator.



### GREATER PROFIT ON EVERY JOB!

#### THE ONE-YARD MIXERMOBILE

**GIVES:** Complete mobility . . . more jobs covered per day! One complete unit means more economy on every job. It saves the cost of hauling and erecting a tower. It saves the cost of hoist and storage hopper because these are included with the attached tower. It saves through the use of dump trucks . . . concrete is mixed on the job (with specially designed scale batch aggregates can be weighed for actual weight mixing).

**READY MIX ECONOMY WITH MIXERMOBILE.** Use the Mixermobile as a portable elevating and agitating storage plant for ready mix concrete. With storage capacity of 4 1/2 cubic yards, Mixermobile eliminates costly stand-by time of ready mix trucks. One man handles the complete operation, both mixing and elevating. Save time, labor with Mixermobile.

**Turns Out 200 Cubic Yards of Concrete Per Day**

**FEATURES INCLUDE:** Hydraulic Controls; Discharge Timer; Fool-Proof Water Control System.

**WRITE TODAY FOR LITERATURE AND YOUR NEAREST DEALER**



We reserve the right to make improvements in design and specifications without notice.

## MIXERMOBILE MANUFACTURERS



Box 7527



Portland 20, Oregon

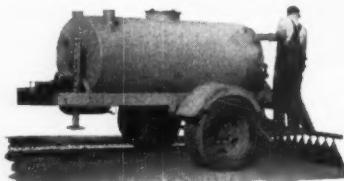
## Built-in Fibre Mileage

Plenty of tough fibre and extra large diameter means extra mileage on Grace brushes.



with 36" diameter brush on  
**GRACE 2-WAY SWEEPERS**

400  
600  
1000  
GALLONS  
CAPACITY  
TRUCK  
OR TRAILER  
MOUNTING



*Vacuum* Cleans Both Spraybar and  
Handspray on **GRACE RAPIDSspray**  
MAINTENANCE DISTRIBUTOR

**W. E. GRACE MFG. CO.**

6100 S. LAMAR ST., DALLAS, TEXAS

### TRANSITE-PIPE INSTALLATION

—Pocket-size guide contains complete information for the installation of Transite pressure pipe. This covers the entire procedure from receiving and handling to pressure and leakage tests. Subjects range from excavating the trench through backfilling and tamping. Line drawings illustrate important operations, and text explains both how and why. In many cases the wrong way is clearly described and labeled along with the recommended procedure. The guide is arranged so that problems are taken up in the order in which they occur on the job.—**Johns-Manville**, 22 E. 40th St., New York 16, N. Y.

### WOOD FOUNDATION PILES

—Booklet (16 pp) assists in proper evaluation of pressure-creosoted foundation piles for various types of construction projects. In reviewing conditions under which wood foundations piles should be pressure-creosoted and the permanent qualities of the treatment, the booklet cites important building codes which allow this type of pile for permanent construction. Typical examples of the use of these piles in various construction projects are described and pictured.—**Koppers Co., Inc., Wood Preserving Division**, Koppers Bldg., Pittsburgh 19, Pa.

**ALL-METAL SLIDE RULES**—Eight types of all-metal slide rules are listed in pocket-size folder. A feature of the folder is a listing of 14 ways in which the P&E deci. scale arrangements increase accuracy and simplify figuring. The bulletin describes construction of the slide rules, and lists several features.—**Pickett & Eckel, Inc.**, 5 S. Wabash, Chicago 3, Ill.

### LODGEPOLE PINE FACTS FOLDER

—Four-page illustrated folder lists facts concerning Lodgepole Pine, one of the associated woods of the western pines. It reviews growth range and characteristics of Lodgepole Pine, and its properties and uses in the building field. This pine is similar in properties to Ponderosa Pine and is used as siding, studding, sheathing, decking, and paneling.—**Western Pine Assn.**, 510 Yeon Bldg., Portland 4, Ore.

**WELDING HANDBOOK**—Complete data on several new products are presented in revised 32-p pocket-size combination low-temperature welding handbook and catalog. This illustrated booklet lists the All-State rods and fluxes; contains tables of characteristics; full application information; and helpful hints of general interest.—**All-State Welding Alloys Co., Inc.**, 273 Ferris Ave., White Plains, N. Y.

## ELECTRIC WHEELS

**Designed to do the Job**

Wheels and Axles are our business, and our engineers are well qualified to recommend the most efficient assembly for your product.

Our factory is modern and tooled for low cost production. We have supplied manufacturers in many different industries for more than 50 years.

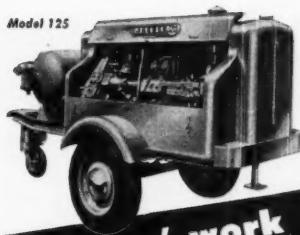
Standard or Special, ELECTRIC Spoke-type or Disc Wheels are built for most types of portable equipment.

Send us your specifications and we will submit our recommendations.



**ELECTRIC WHEEL CO., 2911 Pine, Quincy, Ill.**

Model 125



4 days' work  
now done in 3

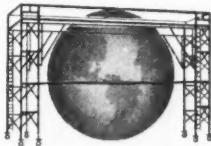
with  
**JAEGER**  
"new standard"  
compressors



Jaeger Model 125 runs 2 heavy duty or 3 medium breakers at full 90 lbs. pressure, doing 30% to 40% more work than at 70 lbs. pressure from a 105 ft. machine.

Other Jaeger "new standard" sizes, 75, 185, 250, 365, and 600 ft., give you comparable work increases. Cost no more than smaller old sizes. Send for Catalog and prices.

**THE JAEGER MACHINE CO.**  
Columbus 16, Ohio



Fastest SCAFFOLDING  
Assembly Ever Devised

**Ezebilt**

No Bolts  
No Wing Nuts  
No Loose Parts

For getting up faster  
... with no bolts to  
fasten, construction  
men the country over  
are now specifying  
Ezebilt Steel-Panel  
Scaffolding.

Write for New Illustrated Catalog #1  
or send for name of nearest distributor.

**UNIVERSAL** MFG. CORP.  
112 NORTH ST., ZELIENOPLE, PA.

**SUSPENDED-CEILING CONSTRUCTION**—Nailock method of suspended-ceiling construction is described and illustrated in the 1950 edition of Nailock Catalog N-2. The catalog also describes recent developments in installing ceilings with or without acoustical materials. These developments include a new special Zipper Splice Lock Clip which holds adjoining ends of Nailock nailing channels in a rigid position and prevents bulges or depressions in the ceiling surface; and the Metal End Lock Strip which holds adjoining sheets of backerboards securely in place.—Nailock Steel Div., The Sanymetal Products Co., Inc., 1705 Urbana Road, Cleveland 12, Ohio.

**PRESTRESSED CONCRETE**—A report on the Walnut Lane bridge in Philadelphia (the first major structure in the United States to be built of prestressed concrete) has been prepared as a 4-p bulletin which stresses the use of Plastiment, a concrete densifier and retarder, in the construction of the bridge. The bulletin describes the project in general, and contains specific information on a sample girder tested Oct. 25, 1949.—Sika Chemical Corp., 35 Gregory Ave., Passaic, N. J.

**GUARDRAILS AND BRIDGE RAILS**—Illustrated 16-p booklet shows how Flex-Beam guardrail and bridge rails contribute to economical highway safety. The booklet contains complete technical data for designers of highway guardrails. Features of the Flex-Beam units, discussed in detail, include high impact resistance, prevention of pocketing, and economy and adaptability. Eight pages of basic design data cover physical properties, tensile and beam strength, and load deflections and permanent set values under various loads for the beams and beam joints.—Armeo Drainage & Metal Products, Inc., Middletown, Ohio.

**SAFETY EQUIPMENT**—General catalog contains a listing of "Everything in Safety". Equipment listed includes respiratory devices, eye protectors, hats, gloves, drum pumps, carboy pumps, and miscellaneous industrial-safety equipment.—General Scientific Equipment Co., 2700 W. Huntingdon St., Philadelphia 32, Pa.

**TORQUE CONVERTER FOR DIESELS**—Construction, operation, and applications of torque converters in combination with diesel engines are described in an interesting catalog recently made available. The catalog describes the "inside story" of the GM torque converter, and provides a detailed explanation of its operation.

(Continued on page 133)

**DISTINGUISHED...**  
by Superior Quality



**\*"AIR KING"**  
*Quick-Acting, Universal  
HOSE COUPLING*

Comparison with similar  
couplings lies in general  
appearance, alone. Service-tested materials,  
precision manufacture  
and careful inspection  
assure unrivaled per-  
formance under all con-  
ditions. Malleable iron,  
cadmium plated, or  
bronze.

Stocked by Manufacturers and Job-  
bers of Mechanical Rubber Goods.

\*Reg. U. S. Pat. Off.

**DIXON**  
VALVE & COUPLING CO.

Main Office and Factory: PHILADELPHIA 22, PA.  
BRANCHES: CHICAGO - BIRMINGHAM - LOS ANGELES - HOUSTON



## "the tougher the rock, the better the driving"



This adage among hard-rock men might sound contradictory to the layman. But miners and tunnel drivers know that progress slows down when they run into formations that are seamy and easily fragmented.

Rock that is tougher and more solid usually makes possible a faster rate of advance.

But whatever your rock conditions may be, you can always depend on Bethlehem Hollow Drill Steel to help you keep drilling on schedule. Having this "old reliable" steel on the job means you can just about forget your drill steel problems. It's a fine steel, through and through . . . with the tough, fatigue-resisting properties that keep drill steel costs at rock bottom.

Specify it by name: Bethlehem Hollow. Prompt delivery of all standard sizes and sections from your nearest supplier or our mill.

- ★ Ideal for either forged or detachable bits
- ★ Smooth center hole minimizes fatigue failure
- ★ Wide quenching range for easy heat-treating
- ★ Controlled hardenability for top performance
- ★ Rigidly inspected for quality and uniformity

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by  
Bethlehem Pacific Coast Steel Corporation  
Export Distributor: Bethlehem Steel Export Corporation

**BETHLEHEM HOLLOW DRILL STEEL**



(Continued from page 131)  
 tion and advantages. The catalog then lists particular applications of these units on tractors, off-the-highway vehicles, and with all types of excavators. Complete engineering data are provided by graphs, tables, and text.—Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Drive, Detroit 28, Mich.

**SELF-PROPELLED BELT-TYPE LOADER**—Adams' TraveLoader picks up and loads dirt, sod, sand, gravel, oil-mix, surplus scarified material, snow, and other types of material which can be windrowed and will travel up a conveyor belt. Catalog 4914 (8 pp) describes operation of the TraveLoader and lists its component features including the full-floating feeder, adjustable conveyor, and heavy-duty drive unit. The catalog contains a complete list of specifications.—J. D. Adams Mfg. Co., Indianapolis, Ind.

**LUMBER-PURCHASING GUIDE**—Membership directory of West Coast Lumbermen's Assn. contains detailed information on sawmills, re-manufacturing plants, timber fabricators, wood pipe and tank manufacturers, and wood-treating plants in the Douglas fir region of Washington, Oregon, and northern California. Included are production capacities, manufacturing and shipping facilities, and percentage production for each species.—West Coast Lumbermen's Assn., 1410 S. W. Morrison St., Portland 5, Ore.

**POWERED SIDEWALK PAVER**—Dotmar self-powered paver can be used for construction of integral gutter, curb and sidewalks, or sidewalk paving in one operation at speeds to 5 lin ft per min. Bulletin 50 (8 pp) features the use of on-the-job pictures illustrating the various types of screeds and trowels available to provide several types of cross-sections. Complete specification and dimension data are provided.—Dotmar Industries, Inc., 503 Hanselman, Kalamazoo, Mich.

**DIESEL ENGINES**—Bulletin 5291 contains complete specifications for all automotive and industrial models of the HR-400 Cummins diesels. These engines develop 100-hp at 1,800 rpm and are available in six models for all types of highway and off-highway automotive applications. Bulletin 5296 contains specifications for the HRBB-600 and HRBBL-600 diesels. These engines develop 175 hp at 2,000 rpm and are designed for automotive applications where there is a need for high rotative speeds and high horsepower.—Cummins Engine Co., Inc., Columbus, Ind.

## New, Improved Hammer and Tampers



**EASIER TO OPERATE,  
SPEED WORK,  
LAST LONGER**

MASTER'S electric "power blow" hammer is a really tough tool that drills into concrete, chips steel and cast iron, drives stakes, caulkships—and does other heavy work formerly handled only by "pneumatics." MASTER'S gasoline or electric tampers are light in weight yet deliver powerful blows from 6150 to 8650 per minute. No vibration in the handle to tire the operator. Wide range of attachments for both hammer and tampers. Write for catalog No. 688 and No. 699.



**MASTER VIBRATOR COMPANY**

118 Davis Avenue, Dayton, Ohio

**D-A**

**LUBRICANTS**



- Last longer
- Lubricate better
- Reduce downtime
- Cut parts bills



**D-A LUBRICANT COMPANY, INC.**

INDIANAPOLIS 23, INDIANA

### SELF-LUBRICATING PACKINGS—

Principles of self-lubricating packing design, structure and performance, and an analysis of individual packing are described in Bulletin LP-10. Specifications are included for each particular type of packing.—**Greene, Tweed & Co., North Wales, Pa.**

**TREATED WOOD**—Two pamphlets on treated wood are now available. One, a 3-p set of instructions, covers recommendations for buying wood treated with formulations of pentachlorophenol to resist the attack of decay, fungi, wood-destroying insects,

and dimensional changes caused by excessive moisture or lack of moisture. The guide covers five types of treatment. The other booklet, entitled "Before You Build or Buy," is pointed toward those dealing with house building. It contains pertinent information on the correct use of pentachlorophenol in protecting the wooden parts of buildings.—**The Dow Chemical Co., Midland, Mich.**

**BOTTOM-DUMP WAGON**—Features of the improved Model FDT bottom-dump Euclids are illustrated and described in Catalog 250. Features

listed include: Easy loading, good traction and flotation, short turns, fast dumping, maximum driver comfort, and heavy-duty construction. Text, accompanied by large photographs, is used to describe principal features of component parts; with particular emphasis on special Euclid features. **The Euclid Road Machinery Co., Chardon Road, Cleveland 17, Ohio.**

### EQUIPMENT RENTAL RATES—

Fifth Edition of the Compilation of Rental Rates for Construction Equipment is now off the presses. The compilation is published for informational purposes only and is not intended to suggest or to influence rates or conditions of rental. Rates listed for 266 major items of construction equipment represent an over-all average of rentals charged by equipment distributors throughout the United States. Cost of the compilation is \$3.00.—**Associated Equipment Distributors, 360 N. Michigan Ave., Chicago 1, Ill.**

### HEAVY-DUTY POWER PLANTS—

Specifications for a line of heavy-duty power plants are described in this 4-p data folder. Specifications listed include model, number of cylinders, bore and stroke, rpm's, piston displacement, compression ratio, maximum torque, and maximum brake hp. The figures are listed for each type of fuel which can be used (natural gas, 70-octane gasoline, distillate, or liquid-petroleum gas). Photographs show typical applications.—**Minneapolis Moline Co., Minneapolis 1, Minn.**

**TRANSMISSION BELTING**—New 28-p. catalog presents detailed design, engineering, and performance data for a line of transmission belting. Tables on belt speeds, arc of contact, friction, horsepower correction, and service factors are included in the manual, together with hints on the proper selection of a belt and the procedure for analyzing belt drives.—**United States Rubber Co., Rockefeller Center, New York 20, N. Y.**

**PUMP CATALOG**—Three types of pumps are described in catalogs published recently. Catalog E-748 describes sump pumps in capacities from 30 to 150 gpm; Catalog F-1049, mixed-flow volute-type pumps; and Catalog F-249, nonclogging centrifugal pumps in a capacity range from 50 to 20,000 gpm.—**Economy Pumps, Inc., Hamilton, Ohio.**

**ARC-WELDING EQUIPMENT**—Folder describes main features and specifications of Heliarc apparatus. Equipment illustrated in Folder F-7013 includes five models of torches for manual and mechanized opera-

(Continued on page 136)



**Your Insurance — for  
SAFETY ON THE JOB!**

### **GOLD MEDAL Junior Safety Swinging Scaffolds**

Costly accident hazards are eliminated with GOLD MEDAL Junior Scaffolds . . . and time and labor saved on many light-duty operations such as stone setting and pointing up masonry.

- Galvanized steel rope replaces dangerous block and falls. No ropes to dangle, tangle or obstruct platform.
- Mechanism assures positive locking at all times.
- Working parts and safety features exposed for inspection and servicing.
- No time lost tying or untying dangerous hitches; uncoiling ropes.

**A Complete Nation-Wide Scaffolding Service** based on seventy years experience in designing, making and supplying off-the-ground safety equipment for the building trades assures you:

**WHAT YOU NEED WHERE YOU NEED IT WHEN YOU NEED IT**



Winch and stirrup for Junior Scaffold. Platform check prevents platform from slipping out of stirrup.

Gold Medal Scaffolds work for thousands of builders. See how they can work for you. **WRITE FOR FREE BULLETIN J-6.**



for Greater Safety... Efficiency... Economy

**THE PATENT SCAFFOLDING CO., Inc.**

38-21 12th Street      Dept. CM      Long Island City 1, New York  
See Your Classified Telephone Directory for Nearest Office

## For power, for value, for every job THEY'RE GREATER THAN EVER

Year after year the nation's truck users buy more Chevrolet trucks than any other make. For every kind of trucking job they prefer Chevrolet power and Chevrolet value.

Now, Chevrolet's two rugged valve-in-head engines give more power than ever. Advance design, solid construction and low prices give Chevrolet more value than ever.

Prove it to yourself. See the new Chevrolet P-L Trucks. Check them for popularity, performance, payload and price. In 1950 they are more than ever America's best truck buy!

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICH.

### LEADING WITH ALL THESE PLUS FEATURES:

- TWO GREAT VALVE-IN-HEAD ENGINES: the New 105-h.p. Load-Master and the Improved 92-h.p. Thrift-Master—to give you greater power per gallon, lower cost per load • THE NEW POWER-JET CARBURETOR: smoother, quicker acceleration response • DIAPHRAGM SPRING CLUTCH for easy action engagement • SYNCHRO-MESH TRANSMISSIONS for fast, smooth shifting • HYPOID REAR AXLES—5 times more durable than spiral bevel type • DOUBLE-ARTICULATED BRAKES—for complete driver control • WIDE-BASE WHEELS for increased tire mileage • ADVANCE-DESIGN STYLING with the "Cab that Breathes" • BALL-TYPE STEERING for easier handling • UNIT-DESIGN BODIES—precision built.



P·L

### ADVANCE-DESIGN TRUCKS

#### P\* Popularity Leaders

Chevrolet trucks outsell all others. In every postwar year truck users have bought more Chevrolets than any other make—proof of the owner satisfaction they have earned through the years.

#### P\* Performance Leaders

The new Chevrolet P-L trucks give you high pulling power over a wide range of usable road speeds—and on the straightaway, high acceleration to cut down total trip time.

#### P\* Payload Leaders

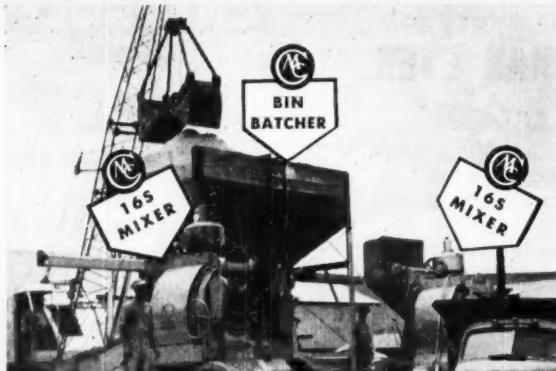
The rugged construction and all-around economy of Chevrolet P-L trucks cut operating and repair costs—let you deliver the goods with real reductions in cost per ton per mile.

#### P\* Price Leaders

From low selling price to high resale value, you're money ahead with Chevrolet trucks. Chevrolet's rock-bottom initial cost—outstandingly low cost of operation and upkeep—and high trade-in value, all add up to the lowest price for you.



You can't beat this combination

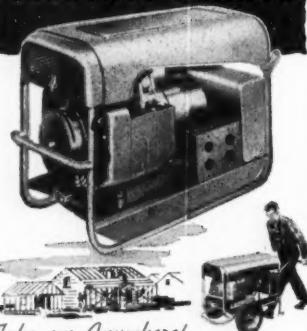


*It's double speed ahead now!*

Here's a portable Central Plant that amazingly reduces pouring costs. It's CMC 165 mixers in tandem with CMC two-bin BIN-BATCHER. When you buy select CMC equipment and you get the best. Every piece of CMC equipment is built to take the punishment of long service! Write today for latest catalog.



*Cut Costs!*  
with ONAN portable  
**ELECTRIC PLANTS**



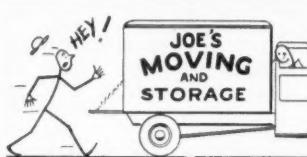
*Take 'em Anywhere!*

**Use Electric Tools on Every Job**

Carry, wheel, or truck 'em to any spot and plug in for all the electric power you need. Lightweight, Onan air-cooled electric plants supply power for electric drills, saws, planers, spades, tampers, lights . . . any electrical equipment. Lightweight A.C. models: 400 to 3,000 watts. D.C.: 750 to 5,000 watts. (Heavy-duty gasoline or Diesel plants to 75,000 watts.)

**Write for Folder**

**D. W. ONAN & SONS INC.**  
8784 Royalston Ave., Minneapolis 5, Minnesota



### CHASING MOVING VANS isn't our line!

So please give us both a break by providing us with at least three weeks' notice when you plan to move or change jobs . . .

Just use the handy form below and mail it to:

DIRECTOR OF CIRCULATION  
CONSTRUCTION METHODS & EQUIPMENT  
330 West 42nd St., New York 18, N. Y.

Name \_\_\_\_\_

Old Address \_\_\_\_\_

New Address \_\_\_\_\_

New Employer \_\_\_\_\_

Your Title or Position \_\_\_\_\_

*And Don't Forget to Notify*

*Your Postmaster, too!*

*and assure uninterrupted*

*service on your subscription*

(Continued from page 134)

tion, new argon regulator and argon flowmeter especially designed to give accurate gas flows, ceramic and water-cooled shielding gas cups, electrodes, and argon-water shut-off valve. Advantages of the inert-gas shielded-arc welding process, and the metals for which it can be used, are described, as well as the theory of the process.—The Linde Air Products Co., Div. Union Carbide & Carbon Corp., 30 E. 42nd St., New York 17, N. Y.

### CARBON-MONOXIDE RECORDER

—Precise measurement and recording of very low concentrations of carbon monoxide in air are possible with the MSA continuous carbon-monoxide recorder described in Bulletin DB-2. The bulletin contains a description of the operation and construction of the unit, including the drying system, motor and pump, circuit of sample, and potentiometer.—Mine Safety Appliances Co., Bradock, Thomas & Meade Sts., Pittsburgh 8, Pa.

### INDUSTRIAL CENTRIFUGAL PUMPS

—Centrifugal pumps for applications involving abrasive or corrosive liquids are described in Catalog 4906. The bulletin describes design principles and construction features of the Nagle pumps, describes three vertical-shaft types, and lists materials of construction employed. It also contains a large section on pump impellers. Complete specifications and dimensions are listed for the entire Nagle line.—Nagle Pumps, Chicago Heights, Ill.

### SECTIONALIZED CONVEYOR

—Four-page bulletin is an illustrated description of the Hewitt-Robins Sectional Conveyors. Bulletin 132 contains a complete description of the head sections, intermediate truss sections, idlers, protective decking, transition section, bent supports, hood covers, loading hoppers, and tail sections. Also listed are 4 H.R. vibrating screens.—Robins Conveyors Division, Hewitt-Robins, Inc., Passaic, N. J.

### WELDING CATALOGS

—Eutectic has made available four catalogs on welding techniques and alloys. Form EU-19 lists aspects of arc welding stainless steel with Staintrodes. It is illustrated with verified case histories. Vol. 6, No. 7 (8-p brochure) lists 15 case histories of production-welding techniques. Form EU-31 describes developments in aluminum welding metallurgy with EutecRod 190. Bulletin EU-16 describes the super-fast Hand-O-Matic electrode for steel.—Eutectic Welding Alloys Corp., 40 Worth St., New York 13, N. Y.

**PLASTIC CEMENT**—Detailed recommendations for mixing and application of Calaveras plastic cement are listed in this pocket-size pamphlet. Six advantages listed are: Greater sand-carrying capacity, unequalled plasticity, accurate control, greater mortar strength, resistance to shrinkage cracks, and unmatched durability.—**Calaveras Cement Co., 315 Montgomery St., San Francisco 4, Calif.**

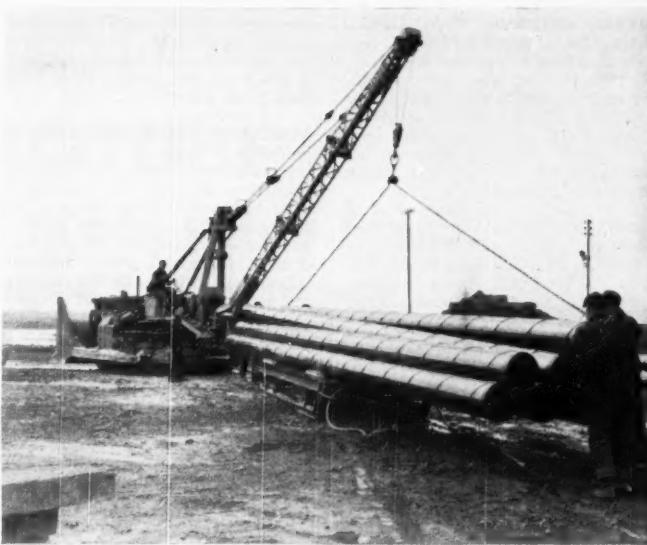
**SAFETY-TRAINING FILM**—This film is designed to convince workers that it's smart to wear safety glasses. It shows which glasses are best for specific jobs, presents case histories of injured workers, and the dramatic testimony of blind persons. It is available on 35-mm sound slide-film, or in a new form for 16-mm sound-motion projectors.—**National Safety Council, 20 N. Wacker Drive, Chicago 6, Ill.**

**LINEAR CONVERSION TABLE**—Reference table lists conversion of inches and fractions into decimal parts of a foot. Known as TDC-110, the table is arranged on a single card and is available free.—**The Babcock & Wilcox Tube Co., Beaver Falls, Pa.**

**HERCULES BULLETINS**—Hercules Steel Products Corp. announces the publication of eight bulletins. These bulletins cover the Hercules cement spreader; materials-handling power chute; medium-duty hoists and dump bodies; the JDX low-mount hydraulic hoist; hoists, medium and heavy-duty and special bodies; split-shaft power takeoff; tire and tool-pack dump body; and fertilizer and lime spreader.—**Hercules Steel Products Corp., Galion, Ohio.**

**SHEET-METAL CLOSURES**—Corrugated closures for sheet-metal buildings are listed in Bulletin 501. The bulletin lists sizes and specifications of the Fabco closures, and shows, by drawings, applications of the product to most types of corrugated building assemblies.—**Fabricated Products Co., Box 8005, Pittsburgh 16, Pa.**

**VERTICAL SPEED REDUCERS**—Type ND (gear shaft downward) and Type NU (gear shaft upward) vertical speed reducers are completely described in Bulletin 125 (8 pp). The bulletin lists six outstanding features of the Cleveland units, contains complete dimensional data, cross-section drawings, and thrust and overhung load-capacity charts. Specifications are provided for the seven sizes in which each are available.—**The Cleveland Worm & Gear Co., 3249 E. 18th St., Cleveland 4, Ohio.**



## NAYLOR Light-Weight PIPE

*Can Help You in a Dozen Ways*

Contractors have found Naylor Pipe the practical answer to a dozen or more assignments on construction jobs.

This light-weight pipe with the extra strength and safety to handle "heavy" jobs is ideal for the following applications:

High and low pressure air lines. High and low pressure water lines. Ventilating lines. Cement pumping pipe. Dredging pipe. Hydraulic sluicing pipe. Sand and gravel conveying lines. Irrigation pipe. Well-point systems. Composite piling. Exhaust and intake piping.

It will pay you to check into Naylor's advantages on your jobs. Pipe sizes range from 4" to 30" in diameter and thicknesses from 14 to 8 gauge. Write for Catalog No. 44.



**NAYLOR PIPE COMPANY**

1268 East 92nd Street, Chicago 19, Illinois

New York Office: 350 Madison Avenue, New York 17, N. Y.

**DIESEL ENGINES, TRACTORS**—Caterpillar catalogs available this month include Form 12676 (29 pp) on the D8 tractor; and Form 12725 (16 pp) on the Models D397, D386, D375, and D364 diesel engines. Both catalogs are thoroughly illustrated and contain complete specifications and capacity ratings.—**Caterpillar Tractor Co., Peoria 8, Ill.**

**HAND HOISTS**—Compact, efficient hand hoists in capacities from  $\frac{1}{2}$  to 4 tons are described in 6-p Folder DH-164. The booklet includes complete specifications, action photographs,

cross-sectional views of the hoists, graphic illustrations, and a listing of their features.—**American Chain & Cable Co., Inc., Wright Hoist Division, York, Pa.**

**VIBRATING SCREENS**—Selection guide for vibrating screens lists types for every sizing and scalping operation. Bulletin 50 contains a section of photographs and working information on screen sizes, production capacity, and service for handling sand, gravel, stone, and hot-mix asphalt. Another section explains mechanical features of Deister

screens and illustrates the high-capacity elliptical-throw principle embodied.—**Deister Machine Co., Fort Wayne, Ind.**

#### **INDUSTRIAL WHEEL TRACTORS**

—Describing the Oliver line of wheel tractors, Catalog A-918 lists specifications, cross-sections, and detailed data on engines and transmissions. One section is devoted to matched allied equipment including bucket loaders, maintainers, plows, mowers, backhoes, brooms, scrapers, and trenchers. The booklet contains many application photos.—**The Oliver Corp., 19300 Euclid Ave., Cleveland 17, Ohio.**

**ARREST AND PREVENTION OF RUST**—Six-page engineering data sheet discusses the arrest and prevention of rust. The report clearly illustrates and describes causes, effect, and proper means for control of rust. Designed for field and maintenance men in the light and power industry, the information is of vital interest to anyone concerned with the problem of rust.—**International Rustproof Corp., 12507 Plover Ave., Cleveland, Ohio.**

**CHAIN-SAW HANDBOOK**—Maintenance, specific uses, specifications, and capacities of a complete line of chain saws are illustrated and described in handbook (36 pp) designed as primer, illustrated guide, and sales manual. The manual covers starting, operating, and stopping the engine; proper oil and gasoline mixtures; how to notch and fell different species of trees; and other applications for this type of saw. A special section is devoted to service information and preventive maintenance.—**Henry Disston & Sons, Inc., Tacony 448, Philadelphia 35, Pa.**

**PORTABLE COMPRESSOR**—Bulletin descriptive of the Model 60-WBD (60-cfm capacity) Super Chief compressor lists 10 features claimed. Photos show the Super Chief in action on several types of work including road-building, public utility, and sand blasting. Compressor specifications are listed in detail.—**Davey Compressor Co., Kent, Ohio.**

**INSULATION HARDBOARD**—Comprehensive technical manual (20 pp) contains detailed information on use of Rubatex R-103-S insulation hardboard for low-temperature insulation. Bulletin describes construction of this material—an expanded-rubber compound, made of synthetic stocks. It will not absorb moisture and may be used without added vapor barrier. K factor is 0.21.—**Great American Industries, Inc., Rubatex Division, Bedford, Va.**

**BUILT FOR ALL-AROUND Heavy-Duty Service**

UNIT is tough! UNIT is versatile! That's why you can use UNIT on any type of job requiring shovel, clamshell, magnet, dragline, trencher, grapple or backfiller. And it's easy to change from one attachment to the other, right on the job. UNIT gives you all the power and speed you need, plus these exclusive features: Automatic traction brakes . . . Disc-type clutches . . . Drop forged alloy steel gears . . . Splined shafts . . . One-piece cast gear case . . . Straight-line engine mounting. Mobile and Crawler Models Available

**UNIT CRANE AND SHOVEL CORP.**  
6305 W. BURNHAM ST., MILWAUKEE 14, WIS., U. S. A.



**UNIT**

**SHOVELS • DRAGLINES • CLAM SHELLS  
CRANES • TRENCHOES • MAGNETS**

**Strong enough EMPTY to support a 100-ton rig!**

# **MONOTUBE** **tapered steel piles**

**cut costs, speeded construction of Nueces Bay Causeway**

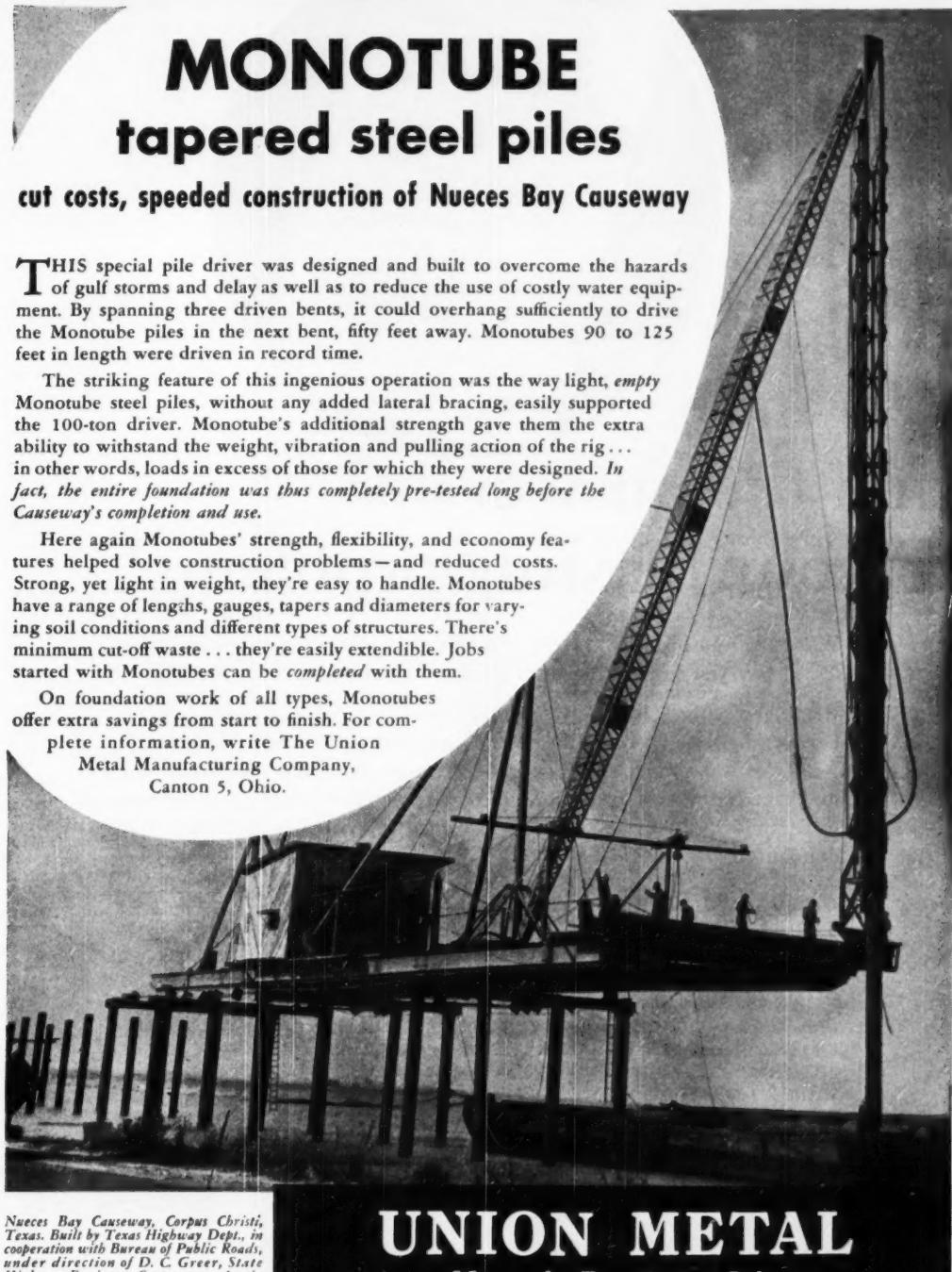
**T**HIS special pile driver was designed and built to overcome the hazards of gulf storms and delay as well as to reduce the use of costly water equipment. By spanning three driven bents, it could overhang sufficiently to drive the Monotube piles in the next bent, fifty feet away. Monotubes 90 to 125 feet in length were driven in record time.

The striking feature of this ingenious operation was the way light, *empty* Monotube steel piles, without any added lateral bracing, easily supported the 100-ton driver. Monotube's additional strength gave them the extra ability to withstand the weight, vibration and pulling action of the rig... in other words, loads in excess of those for which they were designed. *In fact, the entire foundation was thus completely pre-tested long before the Causeway's completion and use.*

Here again Monotubes' strength, flexibility, and economy features helped solve construction problems—and reduced costs. Strong, yet light in weight, they're easy to handle. Monotubes have a range of lengths, gauges, tapers and diameters for varying soil conditions and different types of structures. There's minimum cut-off waste... they're easily extendible. Jobs started with Monotubes can be completed with them.

On foundation work of all types, Monotubes offer extra savings from start to finish. For com-

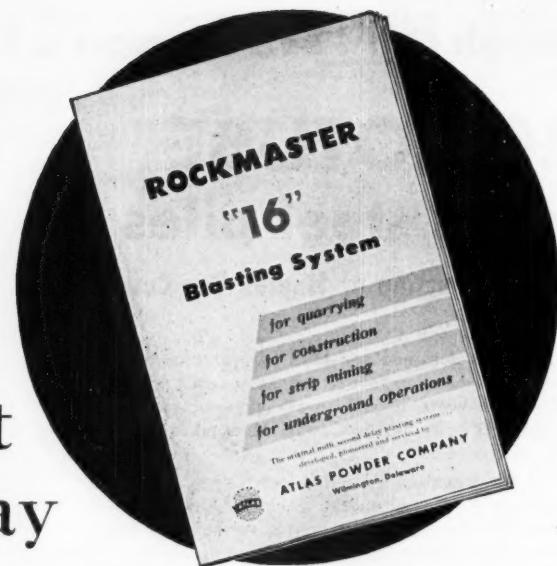
plete information, write The Union  
Metal Manufacturing Company,  
Canton 5, Ohio.



*Nueces Bay Causeway, Corpus Christi, Texas. Built by Texas Highway Dept., in cooperation with Bureau of Public Roads, under direction of D. C. Greer, State Highway Engineer. Contractors, Austin Bridge Co.*

**UNION METAL**  
*Monotube Foundation Piles*

# In this booklet you may find the answer to your blasting problems!



WHETHER you blast rock, coal, or ore—on the surface or underground—it will pay you to read the ROCKMASTER "16" booklet.

Read how this blasting system, pioneered by Atlas, controls timing between holes to thousandths of a second, with *sixteen* delay detonators. Read how the proper control of loading, explosives, and timing controls breakage and throw as they never could be controlled before . . . cuts down noise and vibration . . . often means important savings in drilling and dynamite.

This ROCKMASTER "16" booklet includes diagrams of typical loading in quarries, strip pits, mines, and many types of construction. This valuable booklet is free to blasters. Write or phone the nearest Atlas office for your copy *now!*

**Branch Offices:** CHICAGO 3, ILL., 135 S. LaSalle St. • JOPLIN, MO., 612 Joplin Nat'l Bank Bldg. KNOXVILLE 3, TENN., Hamilton Nat'l Bank Bldg. • NEW YORK 17, N. Y., 60 E. 42nd St. PITTSBURGH 22, PA., 1544 Oliver Bldg. • SAN FRANCISCO 4, CALIF., 1 Montgomery St. SEATTLE 1, WASH., 1320 Joseph Vance Bldg. • TAMAQUA, PA., First Nat'l Bank Bldg.

ROCKMASTER, Reg. U. S. Pat. Off.

# ATLAS

EXPLOSIVES  
"Everything for Blasting"



ATLAS POWDER COMPANY, Wilmington 99, Del. • Offices in principal cities • Cable Address—Atpowco

**CONVEYOR HANDBOOK** — Two systems of ordering conveyors are described in detail in this 52-p handbook. Plan 1 covers pre-engineered conveyors; Plan 2, job-engineered units. The booklet shows how to solve almost any conveyor problem including how wide and how long the conveyor belt should be; correct angle of incline; spacing of idlers; and motor horsepower required. Tables simplify selection of conveyors for any operating condition. The booklet is free of technical formulas and figures.—**Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.**

**I-H CATALOGS**—Three new catalogs are announced by the International Harvester Co. Form A-319-NN describes pipeline construction using the TD-24 and other industrial tractors of the 12-model International line. Form A-420-MM entitled, "Is Your Horsepower Going to the Track?", lists performance-boosting and cost-cutting features of International crawler tractors. Form A-419-MM describes 3-point track suspension and function of the front stabilizer. It is entitled, "How Long Is Your Tractor's Life Line?"—**International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.**

**DIESEL QUIZ**—Pamphlet describes features, characteristics, and application of General Motors diesel engines. Designed in questionnaire form, the quiz provides simple, easy-to-understand answers to 17 basic questions about design and operation of diesels.—**Detroit Diesel Engine Division, General Motors Corp., 13400 W. Outer Drive, Detroit 28, Mich.**

**TORQUE-ARM SPEED REDUCER**—Brochure simplifies selection of torque-arm speed reducer. Bulletin A-470 (16 pp) presents the complete story augmented by full-size photos of the entire mechanism and simplified selection table. The only information required to select the proper size reducer is the horsepower required and the speed and size of the shaft to be driven. Also available in the brochure is information on size of belts and sheaves.—**Dodge Mfg. Corp., Mishawaka, Ind.**

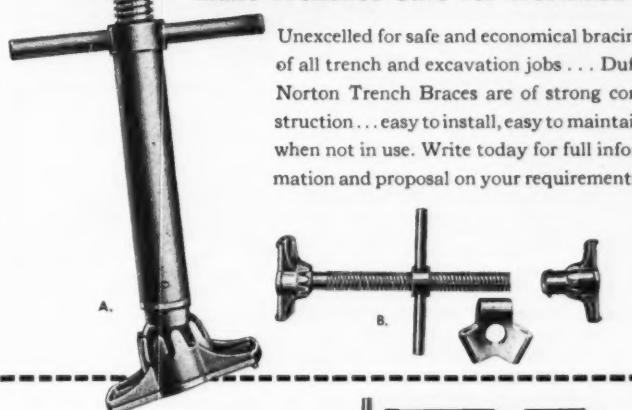
**FOUNDATION COLUMNS** — Anchored-in-rock-socket foundations are feature of this 8-pager. The bulletin describes this type of Drilled-in Caisson, lists its principal features, describes its installation, and lists suggested specifications. Engineering data cover test and design information for determining capacities of Drilled-in Caissons.—**Drilled-in Caisson Corp., 2 Park Avenue, New York 16, N. Y.**

**PREVENT COSTLY**  
*Cave-Ins*  
WITH

**DUFF-NORTON**

**TRENCH**  
*Braces*

### Make Trenches Safe for Workmen



A. This type is supplied complete with pipe (1½" or 2") in lengths from 16" to 60" to suit your needs.

B. Steel fittings only are supplied without pipe if desired. Used with 1½" and 2" pipe.

C. Steel timber brace fittings are furnished without timbers for use with 4" x 4"—6" x 6" and 8" x 8" timbers.

See your local  
distributor or  
write for  
**Catalog 203-B**



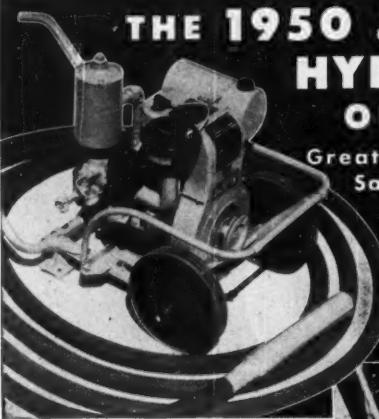
**THE DUFF-NORTON MANUFACTURING CO.**

MAIN PLANT and GENERAL OFFICES, PITTSBURGH 30, PA.—CANADIAN PLANT, TORONTO 6, ONT

"The House that Jacks Built"

# THE 1950 JACKSON HYDRAULIC OFFERS

Greater Time and Labor Savings, Greater Efficiency and Reliability Than Has Ever Before Been Provided In Any Concrete Vibrator for General Construction



## Reaches Every Point in a 100' Circle!

Its 50' hose eliminates many changes of location, saves time and makes the hard-to-reach places easily accessible.

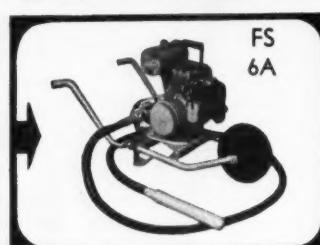
**7 HP ENGINE**—Loads of power for continuous operation, day in and day out. 4,000 to 7,000 VPM (instantly variable) with frequency and amplitude carefully balanced to give perfect compaction under all conditions. 2 3/4" vibrator head.

**NO DAILY MAINTENANCE.** All vibrator parts operate in stream of oil under pressure! **QUICKLY CONVERTED TO WET OR DRY GRINDING.** This machine will save its cost in short order.

### FLEXIBLE-SHAFT VIBRATOR

Model FS-6A is the finest of the engine-driven, flexible-shaft type vibrators. Ample power (4 HP). Available with 3 heads for thick or thin sections. Shafting furnished in 7' to 14' lengths up to 28'. Grinding and other attachments. An excellent performer as proven on thousands of jobs.

#### MODEL FS-150A



FLEXIBLE-SHAFT,  
ELECTRIC VIBRATOR

2 1/2 HP motor. Plenty of power to handle the stiffest mixes with the maximum length of shaft (28'). Operates from light socket, 115 volt, single phase AC or DC. 8,000 to 10,000 VPM. Available with 3 vibrator heads and any length of shaft up to 28'; attachments for quick conversion to wet or dry concrete rubbing. Highly convenient, weighs only 50 lbs.

### IDEAL VIBRATORS FOR EVERY TYPE OF JOB:

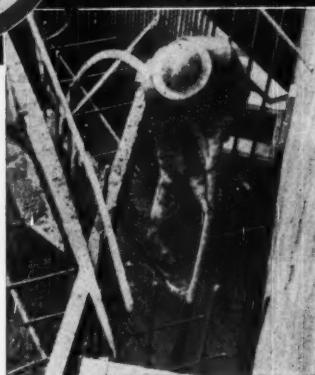
thin sections to mass construction — Highway, airport and municipal paving. Soil compaction. Portable Power Plants.

### FOR SALE or RENT at your JACKSON DISTRIBUTOR

Get your free copy of the Jackson "POCKET GUIDE", describing this equipment.

**ELECTRIC TAMPER & EQUIPMENT CO. • Ludington, Michigan**

**WOOD - FRAME SCHOOL CONSTRUCTION**—Advantages of wood-frame construction for school buildings are shown in pictorial brochure entitled, "School Buildings Your Tax Dollars Can Afford." Form of presentation is non-technical with photos and authenticated data. The economy of this type of construction is listed in tables of comparative costs.—**Timber Engineering Co., 1319 Eighteenth St., N. W., Washington 6, D. C.**



**PROTECTIVE COATINGS**—Corrosion-proofing compound for metal, concrete, and wood surfaces is described in 14-p bulletin. Bisonite M is resistant and non-contaminating to acids, salts, and alkalies. BiChem R is a heat-resistant aluminum paint that dries to the touch in 12 to 18 min. This paint is fully described in a 1-p data sheet.—**Bisonite Co., Inc., 128 Lakeview Ave., Buffalo 1, N. Y.**

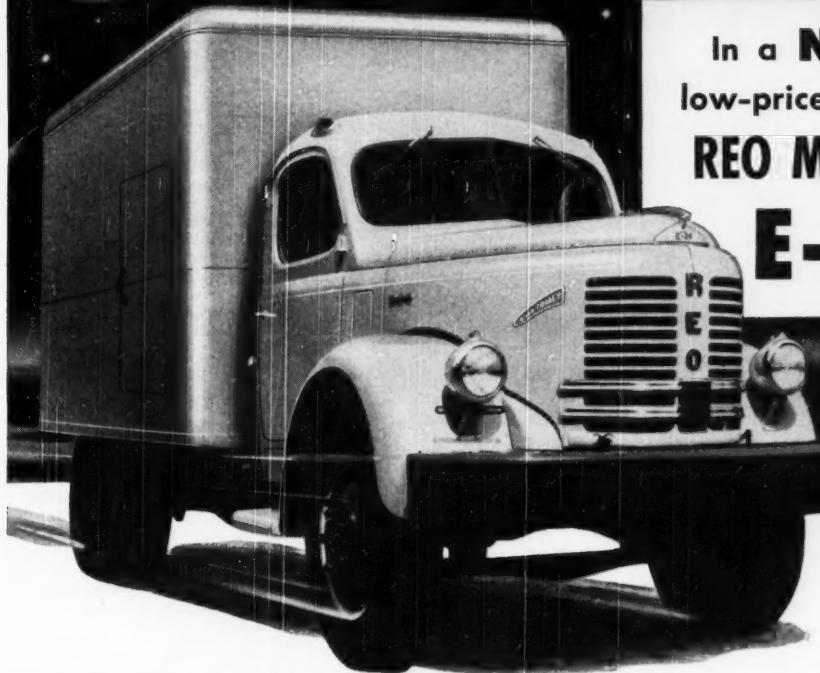
**PORTABLE POWER TOOLS**—New Thor catalogs include: Circular JE-1148 on Thor Copper Line tools including 1/4 and 1/2-in. drills; Circular JE-1139 on the Model 35 sinker rock drill; and Circular JE-1132 on four mining tools including a new sinker leg, air bar feed, pneumatic column, and stoper leg.—**Independent Pneumatic Tool Co., 175 State St., Aurora, Ill.**

**JOIST AND COLUMN FORMS**—Removable steel forms for concrete joists and round columns are described in this bulletin. In addition to describing construction and operation of the Hausman forms, the bulletin contains several illustrations (with job data) of typical buildings which have been built using them.—**The Hausman Steel Co., P. O. Box 416, Toledo 1, Ohio.**

**TRACTOR - SERVICE MANUAL**—Instructions for proper operation, maintenance, and repair of the HD-19 torque-converter-equipped crawler tractor are contained in a 287-p service manual. The manual is divided into 23 sections covering various subjects. The bulletin sells for \$5.00.—**Allis-Chalmers Mfg. Co., Tractor Division Service Dept., Box 512, Milwaukee 2, Wis.**

**FACTS FOR DRAFTSMEN**—Illustrated booklet contains helpful hints for draftsmen. Tips on paper and cloth, standardization of sizes, color, pencil and ink techniques, and the use of reverse carbon paper are covered. The booklet is part of a long-range educational program instituted by the commercial blueprint industry.—**International Assn. of Blue Print & Allied Industries, 506 S. Wabash Ave., Chicago 5, Ill.**

NOW! A THIRD  
**REO GOLD COMET**  
**ENGINE**



In a **NEW**  
low-priced truck  
**REO MODEL**  
**E-20**

**HERE IT IS!**

The Model E-20, all-new member of the most complete line of trucks in Reo history! . . . 16,000-lb. GVW as a truck, 26,500-lb. GVW as a tractor . . . unmatched speed . . . power *plus* . . . real fuel economy . . . Reo "More-Load" design . . . 100% heavy-duty truck construction and performance, guaranteeing long life in a low-priced truck! . . . See it at your nearest Reo dealer's today.

**POWERED BY:**

A new, 255-cu.-in. Gold Comet engine, latest addition to the famous Gold Comet engine series . . . Develops 107 *usable* truck horsepower . . . The only truck engine of its size with overhead valves, removable, "wet" cylinder sleeves, and a seven-bearing crankshaft . . . Modernize your old truck, regardless of make, with a Reo Gold Comet replacement power plant.

**REO MOTORS, INC., LANSING 20, MICHIGAN**

**REO**  
TRUCKS AND BUSES

**DOUGLAS FIR PLYWOOD**—Grades, uses in construction, and plywood properties are listed in the 22-p 1950 basic catalog for Douglas-fir plywood. Among the physical properties listed are nail bearing, acoustical, bending, rigidity, insulation, and condensation. All types of Douglas Fir plywood are listed.—**Douglas Fir Plywood Assn., Tacoma Bldg., Tacoma 2, Wash.**

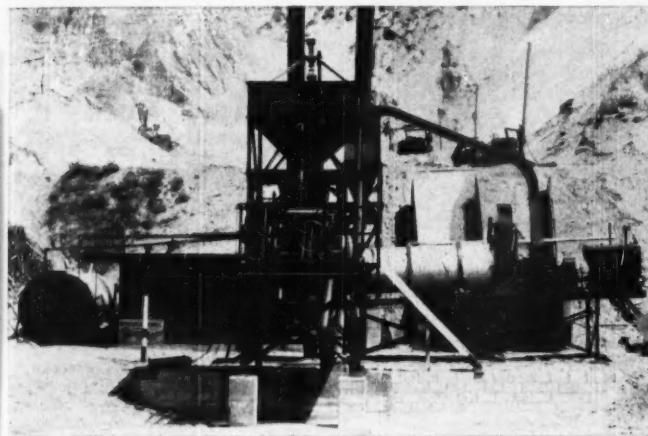
**BUILDING PANELS**—Fenestra steel and aluminum building panels are described in a new 38-p catalog. Panels listed include the Type C for exterior and partition walls, the Type D deck and floor panel of cellular-

steel construction, the Type AD deck and floor panel, acoustically treated panels, and Holorib steel deck for roof spans up to 8 ft 6 in. The bulletin also contains 13 pages of detail drawings, fire-resistance ratings, methods of panel electrification, panel selection tables, and specifications.—**Detroit Steel Products Co., 3141 Griffin St., Detroit 11, Mich.**

**AIR ENTRAINING AGENT**—Darex air-entraining agent, dispensers, and air meters are the subject of a new 40-p. catalog. Among the items listed in this bulletin are fully and semi-automatic dispensers for central-mix

concrete or batching plants; automatic and manually operated dispensers for pavers or mixers; semi-automatic and manually operated dispensers for portable job mixers; semi-automatic dispenser for Mixer-mobility; semi-automatic dispensers for concrete-products plants; automatic supply tanks for dispensers; and pressure-type and rolling-method air meters. Each piece of equipment is illustrated, its principal features of construction are described, and its method of installation and operation is fully explained. If special equipment is needed for the use of a particular unit, this is also indicated.—In the West, Charles R. Watts & Co., 6th, N. W. and Leary Way, Seattle, Wash.; in the East, Dewey & Almy Chemical Co., Cambridge 40, Mass.

**FIELD SERVICE UNIT**—Truck-mounted field service unit, Type PW-308, is described on a 1-p. data sheet. Feature of Bulletin E-232 is a floor plan showing the location of the various equipment including the power generator, welding gases, tool compartments, arbor press, anvil, grinder, vise, compressor, and the other equipment furnished with this unit. The bulletin also contains a listing of the equipment, an end view showing its general set up, and drawings indicating three of the many types of maintenance services it can provide.—**The Davey Compressor Co., Kent, Ohio.**



## An Economical Bituminous Mixing Plant

*economical in first cost and in operation—especially adapted to maintenance work and small paving jobs*

Pictured above is a Model CH-9 Hetherington & Berner bituminous mixing plant. This is a medium capacity (15 to 25 tons per hour) batch mix type plant which may be used for producing either hot or cold mix work. Simple and sturdy in design, CH-9 plants are economical in first cost and in operation, and are ideally adapted to maintenance work and small paving jobs.

CH-9 plants may be equipped with either gasoline or diesel engines, or they may be electrically operated. Aggregate feeder, dust collector for dryer, and screen are available as optional equipment.

Contractors and highway officials interested in producing the highest type of mixes with a minimum investment in plant and low operating costs will find it will pay them to investigate CH-9 plants.

See your local H & B distributor, or write direct for Bulletin MC-49.



### THE HEAVY DUTY MOTO-PAVER

designed especially for heavy mixing, retread and stabilization jobs under the toughest of operating conditions. No other method or machine can produce comparable results at comparable costs. Write for Bulletin MP-49.

**HETHERINGTON & BERNER INC.**

Engineers... Manufacturers

735 KENTUCKY AVENUE

INDIANAPOLIS 7, INDIANA

### CONVEYOR CHAINS; SPROCKETS

Diamond conveyor chains and sprockets are fully illustrated and described in a new 28-p. catalog. Bulletin No. 29 contains information on chains with pitches ranging from 1 to 4 in. with standard and large rollers. Also listed are standard attachment links, extended pins, stainless steel, bronze, and top-plate chains and appropriate sprockets.—**Diamond Chain Co., Inc., 402 Kentucky Ave., Indianapolis 7, Ind.**

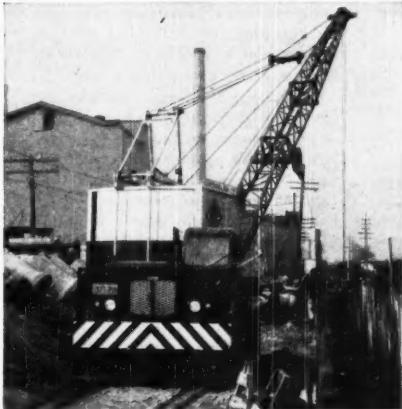
**EXPANSION JOINTS**—Bellows-type expansion joints for piping installations are described in a 20-p. combined manual and catalog. Feature of Bulletin No. 50 is the wide use of dimensional drawings and tables to present the related piping data furnished. These tables cover thermal expansion of pipe and dimensions of the various MagniLastic joints. The booklet also tells how to select expansion joints, flexibility of design permitted by their use, and other data. Types listed include low pressure large diameter Vaculastic stainless steel, Turbo, anchor, offset, and swing joints. Other data in Catalog 50 describe valve bellows, flexible tube bundle casings, and exhaust bellows.—**MagniLastic Division, Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.**



**LIMA**  
**Truck Mounted**  
**Paymaster**

**LIMA**  
**TYPE**  
**34T**

**gives you the winning combination**  
**Mobility plus Performance plus Stamina**



LIMA Truck-Mounted "Paymaster" that pays extra dividends because it can travel between jobs *on its own power*—at automotive speeds. Type 34-T is a convertible shovel, crane, dragline or pull shovel, mounted on a standard 10-wheel truck crane carrier with independent engine for travel. It has a crane capacity of 20 tons (35 ft boom, 10 ft. radius) and shovel capacity of  $\frac{3}{4}$  or 1 yd., with outriggers extended. It can travel up to 31 M. P. H. Rotating equipment duplicates that of the famous crawler mounted "Paymaster", with alterations adapting it to truck mounting—thus assuring the same high peak, continuous performance which has made the "Paymaster" the leader in its field.

**"Wheel-Mounted" units also available**

You can now also get the LIMA "Paymaster" and the LIMA Type 604 (35 ton crane) in a single engine wheel mounted unit. Crawler Mounted LIMA machines are available in Shovel capacities from  $\frac{3}{4}$  to 6 yards, Cranes to 110 tons and Draglines variable.

It will pay you to consult your nearest LIMA Sales Office or Representative before you buy your next shovel, crane or dragline. Offices in principal cities of the world.

**Lima Shovel and Crane Division**

LIMA, OHIO

OTHER DIVISIONS: Lima Locomotive Works Division; Niles Tool Works Co.; Hooven, Owens, Rentschler Co.





**Here's Why  
Crane Users  
Save Money With**

## RUD-O-MATIC

### TAGLINE CONTROL

**1. ON MAGNET PICK-UP JOBS**  
—steel tagline cable takes the load while protective slack is maintained in costly electric cable.

**2. ON CLAM SHELL BUCKET JOBS**—no swing, no sway. Saves time and improves efficiency.

**3. ON ALL APPLICATIONS**—boom and overhead cranes. A heavy duty coil spring assures constant tension without service problems.

Large bearing and fewer sheaves reduce friction and wear.

Easy installation and easy switch to equipment of similar size.



Available in five sizes for boom crane use and 4 sizes for overhead crane application. Used by steel mills, foundries, shipyards, railway shops and scrap dealers.



Available in 8 models to provide proper tension and sufficient cable pull out for various size buckets. Used as standard equipment by all leading crane manufacturers.

**MCGAFFREY-RUDDOCK**  
*Tagline*  
CORPORATION

2131 East 25th St., Los Angeles 11, Calif.

**HOISTING TOWERS**—This 4-page features a description of the construction and operating advantages of the Beaver hoisting towers. The bulletin lists both heavy- and light-duty units. Individual features described in detail are the base sills, catheads, cage, bottom sheave unit, and through-bolt system of construction.—**Beaver Art Metal Corp., Ellwood City, Pa.; or, National Distributor-Dravo Corp., National Dept., Dravo Bldg., Pittsburgh, Pa.**

**DIESEL ENGINES**—Type TS diesel engine is described in Bulletin 173. This bulletin gives a general description of the design of the engine, low-cost fuel requirements, scavenging system, lubrication and piston-cooling system, and reversing gear arrangement. The engine is available with ratings from 3,570 to 8,500 hp; and in a marine model (TSM29).—**Nordberg Mfg. Co., Chicago & Oklahoma Aves., Milwaukee 7, Wis.**

**MOBILE RADIOPHONE**—General specifications and operating features of two-way mobile radiophones are listed in 4-p. bulletin. Specifications cover the transmitter, receiver, power requirements, controls, and dimensions. Bulletin describes the advantages of this equipment, and several types of accessories available for use with it.—**Belmont Radio Corp., Subs. of Raytheon Mfg. Co., 5921 W. Dickens Ave., Chicago 39, Ill.**

**ELECTRIC DRIVE PUMPS**—Specification sheets provide information on the self-priming Rex Speed Prime pumps which are now available with two new mountings for electric motor drives. Advantages listed on the sheets include ability to take any speed of proper horsepower electric motor, compact, Rex Z-metal peeler and impeller, rotary grease seal, and press-formed steel pump body and volute. Specification Sheet 49-10 MLP describes the 2-in. models; No. 49-20 MLP, the 3-in. models.—**Chain Belt Co., 1664 W. Bruce St., Milwaukee 4, Wis.**

**WOOD FOR HEAVY-DUTY CONSTRUCTION**—Advantages and physical characteristics of Greenheart (Nectandra Rodioei) lumber are set forth in new catalog. This wood is recommended for marine and heavy duty construction. The catalog lists outstanding characteristics, compares Greenheart to several other standard construction lumbers and describes several installations in which it has been used.—**Greenheart & Wallaba Timber Co., Inc., 52 Vanderbilt Ave., New York 17, N. Y.**

**If you do  
big construction  
you need this**

**LOW-COST  
PRECISION TRANSIT**



Price Only \$400 Complete with Tripod. With "A" Standard and Compass — \$425.00 F.O.B. Factory

**The David White Western Precise Preliminary Transit gives you wide Versatility for Engineering and Surveying**

Why do you need this instrument? Because, no other instrument gives you the precision, the easy, fast working facilities for a variety of engineering and survey work *at so low a cost*.

Telescope 9 1/4" long, dust and dirt free internal focusing — coated optics — erecting eyepiece, and a magnifying power of 20 diameters. Horizontal Limb 5 5/8" Dia. with 1 Double Vernier Reading to single minutes. Vertical Circle 4" Dia. with guard. It can be used equally well on long distance or close work.

If you're in the market for a new preliminary precise transit, investigate the David White Model No. 7064-U illustrated above. Compare its many features and its price to all others. You'll like what you find out! See our nearest dealer or write direct. Free Bulletin No. 1050 will give you complete details on this and David White's complete line of fine engineering instruments. David White Co., 343 West Court St., Milwaukee 12, Wis.



*We offer complete, prompt repair service, on all makes of instruments — levels, transit, theodolites, etc.*

## SALES AND PARTS SERVICE

A department devoted to manufacturers' activities involving the sale and distribution of products and parts, and service facilities. Designed to give the reader information that will enable him more readily to purchase products and parts and to service his equipment.

### Distributor Appointments

**Hobart Brothers Co.**, Troy, Ohio has named White Welding Supply Co., St. Louis, Mo., as representative for sale of Hobart arc-welders, electrodes and accessories for metropolitan St. Louis and surrounding Missouri and Illinois counties.

**General Motors Corp.**—Sioux Road Equipment, Inc., Sioux Falls, S. D., appointed industrial distributor for Series 71 General Motors diesel engines in South Dakota. Complete stock of G.M. diesel parts is maintained for any service job and complete overhauls.

**Hyster Co.**—Northeast Industrial Equipment Co., Cambridge, Mass., is now handling sales and service of Hyster lift trucks, straddle trucks, mobile cranes and attachments in territory comprising Maine, New Hampshire, Rhode Island and ten counties of Massachusetts.

**Huber Mfg. Co.**—John Bowman Co., Inc., 12 Water St., Bryn Mawr, Pa. handles sale of complete line of Huber road equipment in Philadelphia area.

**Marion Power Shovel Co.**—Townsco Equipment Co., Oklahoma City, Okla., named exclusive distributor for Oklahoma.

**Joy Mfg. Co.**—Coast Equipment Co., San Francisco, Calif., appointed sales and service representative for air compressors, hoists, rock drills, cutters, conveyors, loaders and shuttle cars.

### New Sales Outlets

**General Tire & Rubber Co.**—New northeast sales division, at 119 Brainerd St., Boston, Mass., formed to combine company's Boston and Buffalo branches, with James W. Haggerty in charge.



**"Standard of Quality" FOR STEADY, LOW-COST SERVICE ON EVERY PILE DRIVING JOB...**

### *The Hose With a Reputation... for Outstanding Safety and Durability*

From 80 years of hose-making experience, Goodall has built into "INFERNO" the high factor of safety and the qualities insuring extra long service life that make this hose so desirable and economical for all pile driving operations and every other heavy duty steam service. The tube offers remarkable resistance to hardening and cracking under high temperatures. Tightly braided galvanized steel wires reinforce the rugged, heat-resistant carcass. The tough red cover withstands severest abrasive wear and all conditions of weather. Long-lasting flexibility is another feature of "INFERNO'S" powerful construction.

Recommended for pressures up to 200 lbs. and temperatures to 400° F. Stocked in all sizes from 1/2" to 2" I. D., in maximum lengths of 50 feet.

*Prompt Delivery to Your Job from a Nearby Goodall Branch*



**GOODALL RUBBER COMPANY**

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

Branches: Philadelphia - New York - Boston - Pittsburgh - Chicago - Detroit - St. Paul - Los Angeles - San Francisco - Seattle - Portland - Salt Lake City - Denver - Houston - Distributors in Other Principal Cities

Est. 1870

**H. K. Porter Co., Inc.**—Quaker Rubber Corp. division has opened new stock-carrying branch at 311 First Ave., Pittsburgh, Pa., under direction of H. M. Sossaman.

**Precision Welder & Machine Co.**—Newly appointed representatives are: Upton, Braeden & James, Ltd., Montreal and Toronto, also Arcos Inc., Philadelphia, Pa.

**Cruver-O'Neil Sales Co.**—New company with headquarters in Tacoma, Wash., organized to handle line of wood door and plywood products.

### Sales Personnel

**Air Reduction Sales Co.**: J. H. Berryman is appointed assistant to Scott D. Baumer, manager, technical sales division.

**American Brake Shoe Co.**: Paul L. McCullough, Jr., is transferred to the Pittsburgh, Pa., district sales office where he will serve as sales engineer for the American Manganese Steel and Electro-Alloys divisions.

**Borg-Warner Corp.**: Robert G. Holmes is appointed branch manager of the Chicago sales office of Morse Chain Co.

**General Electric**: Frank M. Lewis is district representative for the Pittsburgh, Pa., trading area.

**McCulloch Motors Corp.**: Glenn W. Malme takes charge of sales promotion for chain saws, gasoline engines and pumps, with headquarters at company's plant in Los Angeles, Calif.

**R. G. LeTourneau**: Steve Czerwinski named sales promotion supervisor, succeeding Vernon E. Pray, resigned. Walter E. Kohrs assigned to sales promotion section.

**Fairbanks, Morse & Co.**: New branch managers are J. C. Elmburg at Portland, Ore. and George A. Hawkins at Atlanta, Ga. Howard Oxsen, formerly at Atlanta, returns to San Francisco as manager of diesel engine sales in that area.

**Goodyear Tire & Rubber Co.**: R. M. Junker appointed manager of industrial roll sales department replacing Ernest Peterson, retired.

**Huck Manufacturing Co.**: Promotions announced are: Robert N. Hendrickson to vice-president in charge of sales engineering and Frank A. Dobbs to vice-president in charge of sales. Company is specialist in cold riveting and fastening processes.

**Republic Rubber Div., Lee Rubber & Tire Corp.**: Wayne H. Hunter is transferred to St. Louis as territory representative.

**R. G. LeTourneau, Inc.**: George Wacker is appointed western sales manager covering Oregon, Washington, California, Idaho, Nevada, Arizona, Utah, Alaska, and British Columbia.

**Marlow Pumps**: Ralph Thornburg has joined Marlow pumps as district sales representative for the east coast district from metropolitan New York to Virginia; A. F. Woods is district sales manager for Kentucky, Ohio, eastern Indiana, and eastern Michigan.

**Nordberg Mfg. Co.**: Jos. G. Broz is sales manager of the Four Cycle Diesel Engine Dept.

**General Tire & Rubber Co.**: New territory representatives of New York branch are: William Kilgour (Or-

(Continued on page 151)

## HANDIE-TALKIE PORTABLE COMMUNICATION UNIT

Available in 25-50 mc., 500 MW.;  
and 152-174 mc., 250 MW.



TEN-FOUR! We'll go along with you on any kind of a job where a man can walk—keep back out of your way—leave your hands free for other work and give you superior performance and the complete reliability characteristic of all Motorola mobile and industrial equipment.

The Handie Talkie 2-way radio unit has extraordinary receiver sensitivity along with precision crystal controlled stability. It has a plug-in "Uni-Stage" and cellular construction, and is available with either dry or rechargeable wet batteries. Complete with antenna, handset, and batteries IT WEIGHS LESS THAN 10 pounds!

Only Motorola Makes the  
Handie Talkie Radiophone!

specialists in mobile radio  
for over 20 years.

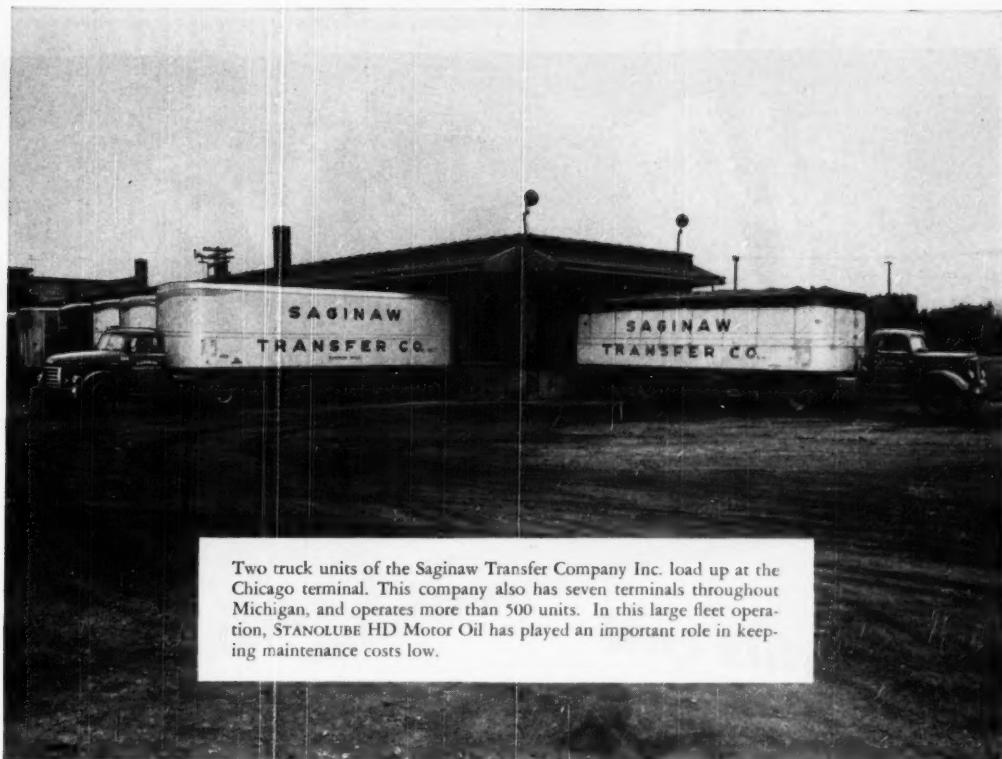
**Motorola**  
Communications Division

## PACK SET

Designed for back carrying, the Pack Set also features Uni-Stage, and cellular construction, operates for a week of eight hour days on one change of dry battery pack. Provided with a loud speaker, the entire unit is a durable, weather proof package.

4545 Augusta Blvd., Chicago, Ill.  
In Canada: Rogers Majestic Ltd., Toronto

## PORTABLE 2-WAY RADIO



Two truck units of the Saginaw Transfer Company Inc. load up at the Chicago terminal. This company also has seven terminals throughout Michigan, and operates more than 500 units. In this large fleet operation, STANOLUBE HD Motor Oil has played an important role in keeping maintenance costs low.

## Saginaw Transfer Company reports lower costs with...

• In the last five years, over 500 fleet units of the Saginaw Transfer Company Inc. travelled more than 150 million miles. That vast operation backs up the following report on STANOLUBE HD Motor Oil:

"We have used this excellent heavy-duty lubricant in gas and Diesel units. Clean engines, absence of crankcase sludge, and increased engine life have all been factors in reducing our maintenance costs," writes Manager Hale F. Lemmer. "The fine performance of STANOLUBE HD Motor Oil in our fleet has assured us of the dependability of this product."

You can rely on the experience of this fleet operator. It indicates the savings you can make with STANOLUBE HD Motor Oil. Your engines will stay clean, free from corrosion, and protected against wear. You'll have fewer overhaul jobs.

**STANOLUBE HD**  
REG. U. S. PAT. OFF.  
**Motor Oil**

You can rely, too, on the experience and special training of a Standard Oil Automotive Engineer. His services can be obtained quickly and easily. Call on him to help you with preventive-maintenance problems. Phone the nearest Standard Oil (Indiana) office, or drop a card to: Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

**STANDARD OIL COMPANY (INDIANA)**





## *was this call necessary?*

**Some "Moral Insurance" here might have avoided a serious accident**

Workmen's compensation is a fine thing—but it can't replace a mangled arm.

Safety laws prevent many accidents—but they can't cover every hazard of an individual plant.

Accident prevention which goes *beyond the law* is an unwritten responsibility of every employer. It is his "Moral Insurance" for his employees' welfare.

The premiums for "Moral Insurance" are not high. They do not have to be paid for in fancy safety gadgets. Their cost is simply the institution of common sense safety regulations covering all local hazards—enforced by employee committees with the full support of management.

Yes—"plant safety" is a mutual job.

**DON'T FORGET—THE LIFE YOU SAVE MAY BE YOUR OWN**

**Published in the public interest by:**



# McGRAW-HILL PUBLICATIONS

## HOW TO HANDLE ANY RIGGING JOB

- effectively
- safely



MEET today's problems in industrial and construction rigging with this complete book. Use it as your guide to safe and efficient rigging methods and techniques—in transporting or handling heavy machinery or materials... in your everyday maintenance operations... in erecting or demolishing smaller size structures.

This book enables you to do the job quicker, safer, at lower cost. It shows how to determine the weight of a load, and describes equipment and techniques best suited to its transportation or hoisting. It explains applications, illustrates construction details, gives maintenance tips for all kinds of rigging equipment, shows how to use, inspect and maintain fiber and wire ropes, slings, scaffolds, life belts, cranes and derricks, chain hoists, etc.

JUST PUBLISHED

## HANDBOOK OF RIGGING

By W. E. ROSSNAGEL

Safety Engineer,  
Consolidated Edison Co. of New York, Inc.

321 pages, 6 x 9, over 300 illustrations,  
\$4.75

PACKED into the pages of this guide are proven methods that can help you perform your job with greatest safety to all concerned. The book includes simple formulas useful in the accurate calculation of beams and posts, etc. It provides a wealth of data on wire rope installations, and covers every step in rigging operations—from rigging a swinging scaffold and painting a steel structure, to using a hydraulic jack and operating a hoist. Reference codes, laws and standards are listed to help you ensure that there will be no violation of local laws, no deviation from safe practices.

Shows how to:

- lubricate wire rope
- rig a basket-type sling
- test pulleys for scaffolds
- operate a suspended hoist
- use a suspended scaffold on heavy repair jobs
- test a jack
- and many, many others

SEE THIS BOOK  
10 DAYS FREE



McGraw-Hill Book Co., Inc.  
330 W. 42 St., New York 18

Send me Rossnagel's **BOOK OF RIGGING** for 10 days' examination on approval. In 10 days I will remit \$1.75, plus few cents for delivery, or return book postpaid. (We pay for delivery if you return with this coupon; same return privilege.)

Name

Address

City

Zone

State

Company

Position

This offer applies to U.S. only.

CM 5-26

(Continued from page 148)  
ange, Sullivan and Dutchess counties) and J. J. Mullen (Nassau and Suffolk counties).

**Hyster Co.:** Three new district managers of industrial truck sales are: Donald R. Shaffer (southeastern Canada, eastern Michigan, northern Ohio and southwestern New York); John F. Wright (western area, including Alaska, western Canada, Washington, Oregon and parts of Montana and Idaho); Karl T. Barr (Hawaiian Islands, and California, Arizona, Nevada and Utah). Hollis I. Conner has been appointed assistant manager of the export division.

**Atlas Chain & Mfg. Co.:** Oliver J. R. Troup, Jr. appointed sales engineer and assigned to Eastern Pennsylvania, New York State and Maryland territories.

**Allis-Chalmers:** Frank R. Freyler promoted to manager of Mid-Atlantic region, with headquarters in Philadelphia, succeeding William Arthur who requested retirement. Arthur D. Brown, formerly manager of Washington, D. C. office, succeeds Mr. Freyler as manager of Philadelphia district office and R. N. Landreth becomes new manager of Washington office.

**Dixie Concrete Pipe Co.:** Manager of new Louisville, Ky., firm is Frank B. Emch. James H. Graves is sales representative for Kentucky and Roy is in charge of production.

**Federal Motor Truck Co.:** F. Jule Weiland appointed factory sales representative for Wisconsin, upper Michigan and northeast Minnesota. J. Ross Holland is named factory sales representative for Oklahoma region and northern Texas.

**Jaeger Machine Co.:** Don Anderson promoted to sales manager of Pump Department. A. C. Saxe will continue to direct engineering service and development work on dewatering and pressure pumps of self-priming type.

**Lincoln Electric Co.:** C. L. Stocker has assumed sales and engineering responsibilities in San Francisco area at district office 1303 Sanford Ave., Emeryville, Calif., where additions to welding engineering staff include M. F. Yale and T. Nichol. A. L. Patnik has been given responsibility for Lincoln welding engineering in Seattle district with offices at 1914 Utah Ave., Seattle, Wash.

Get **MORE JACKING POWER**

**LONGER JACK LIFE**

**A User Says:**  
"47,000 lifting cycles in 18 months operation under 340° temperature."



Dependable performance, day after day on difficult jobs, produces reports like these from Simplex Hydraulic Jack users. Engineered for faster, safer jacking, with no maintenance cost, every Simplex Hydraulic has these superior features:

**LEAKPROOF, WEARPROOF**, high pressure packing seals of Neoprene.

**SPRING CONTROLLED, NON-STICKING**, Ball Valves for trouble-free operation.

**HORIZONTAL or VERTICAL OPERATION** with double lever sockets to speed work.

**SMOOTH ACTING RAM** of SAE X1112 steel, machined and ground to minimum tolerance.

Put a Simplex Hydraulic to work on your tough jacking jobs to save time and manpower. Available in eight models with capacities from 3 to 100 tons—safety-tested to 50% over rated capacity.

SEND TODAY FOR BULLETIN: HYDRAULIC 49

**Simplex**  
SCREW HYDRAULIC  
Jacks

**TEMPLETON, KENLY & CO.**  
1008 South Central Avenue  
Chicago 44, Illinois

**Allis-Chalmers**—Chester W. Schweers named manager of New England region, with headquarters in Boston; he succeeds W. F. Taylor, resigned. R. S. Stevenson appointed general sales manager of Tractor Division, succeeding Marshall L. Noel, resigned.

**Tractomotive Corp.**—Marshall L. Noel has joined company as vice-president and treasurer; he was formerly with Allis-Chalmers.

**W. H. Anderson Co.**—Harry J. Schultz appointed general sales manager,

in Detroit; he was formerly equipment salesman for Dravo-Doyle Construction Co. and served with Equipment Corp. of America and with Independent Pneumatic Tool Co.

**Caterpillar Tractor Co.**—Frank S. Foster appointed assistant sales manager, Western division. Gorden J. Fowler promoted to assistant sales manager, Eastern division.

**Durisol, Inc.**—Ralph G. Gulley named architectural consultant and special assistant to president.

**Dravo Corp.**—Louis P. Struble, Jr. promoted to general manager of Keystone division.

**Detroit Automotive Products Corp.**—O. B. Casey has rejoined company as national service manager.

**Federal Motor Truck Co.**—Keith Holbrook appointed factory sales representative in Salt Lake City region, including Utah, Arizona, Nevada, northwest Wyoming and lower Idaho. E. R. Guy becomes factory sales representative in Des Moines region, comprising Iowa, Nebraska, South Dakota and Mississippi River counties.

**Frederick Post Co.**—Thomas L. Cooney appointed general sales manager for sensitized reproduction materials, engineering supplies and equipment. Arthur C. Morales becomes manager of Southwestern division in Houston, Tex.

**Fairbanks, Morse & Co.**—Robert H. Morse, Jr. elected president of company; he was formerly vice-president in charge of operations and sales.

**General Electric Co.**—James Hollards Alderman named North Central district representative in Indianapolis, Ind., for construction materials department. G. F. Naughmer appointed head of new Midwestern and South Central apparatus sales district headquarters in St. Louis, Mo.

**General Motors Corp.**—Norman Hill appointed manager of service products sales of New Departure division (ball bearings) with headquarters in Bristol, Conn.

**Lee Rubber & Tire Corp.**—O. S. Dillison elected vice-president with headquarters in Youngstown, Ohio. E. M. Ikirt appointed general manager of Republic Rubber division. R. W. Deemer named production manager of Republic Rubber division.

**Mack Trucks, Inc.**—C. L. Brosseau named manager of St. Paul, Minn. branch. He was formerly manager of Mack's Indianapolis branch. P. J. Degnon named manager of newly created Eastern Sales division comprising New England, Northeastern, Metropolitan New York and Northern New Jersey sales territories, with headquarters in Long Island City, N.Y. Pierce J. Fleming named manager of off-highway sales division, with headquarters in Empire State Building, New York City. E. G. Ewell named general sales manager of Eastern, Atlantic, and Southern sales divisions, with headquarters in New York City. A. F. Fenner appointed general sales manager with headquarters in Chicago, direct. (Continued on page 154)

## Kept Punching 'em down into SOLID CORAL ROCK



Palmer Lake Bridge Project: Owner—Dade County; Builder—Board of County Commissioners; Engineers and Designers—County Engineer E. A. Anderson and Assistant Herbert S. Daffin

On a bridge job in Florida, concrete piles were driven into solid coral rock . . . without faltering, without delay . . . by an 11-B-3 McKiernan-Terry Double-Acting Pile Hammer. Damage to the pile head was very slight. No special equipment was used in this unusual application.

No matter what your project, you can count on the power and dependability of McKiernan-Terry Pile Hammers. For the standard McKiernan-Terry line of five double-acting and five single-acting hammers and two double-acting extractors provide a choice to meet any driving or pulling requirements.

**McKIERNAN-TERRY CORPORATION**  
MANUFACTURING ENGINEERS  
14 PARK ROW, NEW YORK 7, N. Y.

MKT 275 B

**McKiernan-Terry** PILE HAMMERS AND EXTRACTORS

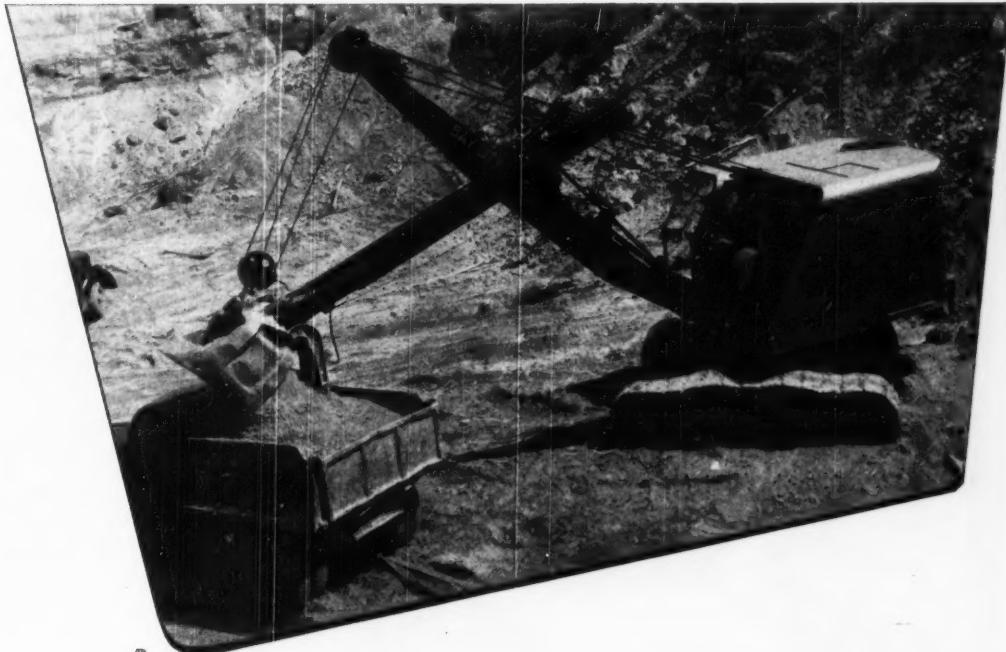


# What do you get when you buy a $\frac{3}{4}$ yard shovel?

to get the  
most for your money  
make your own  
comparison

A few essential specifications of the heavy-duty 45 are listed here so you can compare them with other  $\frac{3}{4}$  yard shovels. Make your own comparison and you will buy BAY CITY for the biggest value in excavating and material handling equipment. Let's get acquainted — Write for catalog today. BAY CITY SHOVELS INC., Bay City, Michigan

	BAY CITY MODEL 45	Other $\frac{3}{4}$ Yd. Shovels
WEIGHT	45,000 lbs.	
POWER	81 HP @ 1200	
ENGINE DISPLACEMENT	517 Cu. In.	
SHOVEL BOOM	19'-0"	
CROWD	One-piece Chain	
DIGGING RADIUS 45°	28'-1"	
CRANE BOOM (STD)	35' Pin-connected	
CRANE CAPACITY, 10' RAD.	27,300 lbs.	
BASES	Cast alloy steel	
GEARS	Helical Cut	
CLUTCHES	Mechanical power	
CRAWLER LENGTH	12' 6"	



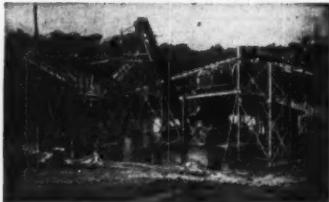
## BAY CITY



SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS

# Crush Your Own Rock Reliance

EQUIPS  
your  
JOBS



## RELIANCE PRODUCTS

Rock Crushers, Bucket Elevators, Revolving Screens, Storage Bins, Pulverizers, Chip Spreaders, Heating Kettles, Bin Gates, Feeders, Belt Conveyors, Grizzlies, Air Separators, Sand & Gravel Spreaders, Wash Boxes.

Rather than face the delay and expense of rail or highway shipments of crushed stone, gravel and sand, install your own plant and save both time and money.

We'll gladly refer you to contractors who are making money and rushing their work with RELIANCE Equipment.

Write for the latest RELIANCE Bulletins.

Quality products still available at moderate cost.

## UNIVERSAL ROAD MACHINERY CO.

Kingston, N. Y., U. S. A.

DISTRIBUTORS IN ALL PRINCIPAL CITIES OF U. S. A.

(Continued from page 152)  
ing sales and service activities in Central, Southwestern, Pacific Coast divisions and in Mexico.

**D. W. Onan & Sons, Inc.**—Howard Dahl named direct factory sales representative for New England states and New York, with headquarters in Sea Bright, N.J.

**Marion Power Shovel Co.**—Ralph W. Kerr appointed sales representative for Michigan and western Ohio, with headquarters in Marion, Ohio. He succeeds John Hildinger, resigned. William W. Wilkinson named sales representative for southern Indiana, southeastern Illinois and Kentucky, with headquarters in Evansville, Ind. Melvin Kraft appointed sales representative in New York City district office.

**W. A. Riddell Corp.**—Robert D. Mathews named district representative for Missouri, Kansas, Oklahoma, Arkansas, Louisiana and Texas.

**Rosco Mfg. Co.**—Harold Clark appointed general sales manager for United States and Canada. (Bituminous distributors, street flushers, road brooms and tar kettles.)

**John A. Roebling's Sons Co.**—Walter A. Huber appointed general manager of Wire Rope Division.

**Rock Bit Sales & Service Co.**—Tom Bono appointed sales representative in Middle Atlantic territory.

**Soule Steel Co.**—Alexander Cromwell appointed vice-president to manage Pacific Coast steel building business.

**Templeton Kenly & Co.**—Arthur Templeton appointed to sales engineering staff to cover Chicago territory.

**L. Sonneborn Sons, Inc.**—Milton D. Lieber heads new Paint Division at Sonneborn factory in Nutley, N. J.

**Universal Concrete Pipe Co.**—Zane P. Laurine appointed to production and sales staff.

**Wisconsin Motor Corp.**—Phil Norton, general sales manager, appointed vice-president. He was recently elected president of the Internal Combustion Institute.

**Youngstown Sheet and Tube Co.**—New district sales managers of Youngstown Steel Products Co. are: E. N. Hagstrom, at Grand Rapids; W. J. Burt, at Des Moines; J. J. McMahon, at Milwaukee; and Charles S. Hogan, at Minneapolis.

**Marlow Pumps**—Fred R. Paris appointed district representative for Marlow pumps at Ridgewood, N.J.; he will be in charge of pump sales

DIG REAL DIVIDENDS

WELLMAN

Williams Type

Welded Buckets

Operators prefer the Wellman Bucket for its balance, easy handling, and digging power. Owners prefer the Wellman Bucket for its bigger payloads, lower maintenance cost. These features are not accidental. Wellman pioneered in welded construction of rolled steels which make these buckets lighter, stronger, for greater yardage at lower costs. In all types and sizes, you'll do better with a Wellman!

There's a Wellman Bucket for every service

THE WELLMAN ENGINEERING COMPANY  
2017 CENTRAL AVENUE  
CLEVELAND 4, OHIO

for New York State and part of Canada.

**Keystone Asphalt Products Co.**—William D. Redhead appointed sales representative in Atlanta, Ga., to cover eastern Tennessee, North Carolina, South Carolina, Alabama, Georgia and Florida.

**Pennsylvania-Dixie Cement Corp.**—Fred L. Doolittle named vice-president and general sales manager.

**W. A. Riddell Corp.**—A. William McGraw promoted to general sales manager, Warco-Hercules road machinery division, covering motor graders and road rollers.

**The Euclid Road Machinery Co.**—J. R. (Jack) Blackburn died on March 25. At the time of his death, Mr. Blackburn was manager of Euclid's Hibbing branch. From 1935 to 1940, he served as district manager of the Minnesota territory.

**Hunter Tractor & Machinery Co.**—Two new directors elected: S. A. Felder, vice-president and M. R. Hunter, Jr., sales manager.

**Hewitt-Robins, Inc.**—Richard S. Wharton named sales manager of Hewitt Rubber Division; he was formerly vice-president in charge of sales of Quaker Rubber Corp.

**McKiernan-Terry Corp.**—John W. Wilkinson appointed general sales manager.

**Morton-Gregory Corp.**—Jack Godley named Washington, D. C., manager of Nelson Stud Welding Division, with headquarters in Taft Building, 1603 K St.

**D. W. Onan & Sons, Inc.**—Frank Gerhard appointed direct factory sales representative covering entire West Coast and Alaska, with headquarters in Portland, Ore.

### Ownership Changes

**Hyster Co.**—Portland, Ore. has taken over manufacture and sale of Turret trucks formerly produced by Salisbury Corp. of Los Angeles, Calif.

**Rice Pump and Machine Co.**—of Milwaukee, formerly a division of Milwaukee Chaplet & Mfg. Co. has been established as a separate corporation.

### New Plants and Offices

**Kaiser Steel Corp.** has opened a sales office in M&M building, Houston, Tex., to handle steel pipe in Southwest. In charge is L. G. Johnson, formerly in sales department of Republic Steel Co.

(Continued on page 156)

**VIBER**  
**VIBRATORS**

*Selected*

to reduce time  
and increase profits  
on all  
**CONCRETE CONSTRUCTION**  
*through*  
**INTERCHANGEABILITY**  
**VERSATILITY**  
**DEPENDABILITY**  
on the job

ELECTRIC  
PNEUMATIC  
GASOLINE and  
EXTERNAL

**VIBER COMPANY**  
Concrete Vibrators Since 1931

Dept. 19, 726 South Flower Street • Burbank, California

**Preferred for PEAK PERFORMANCE**

**15 TO 30 H.P.**

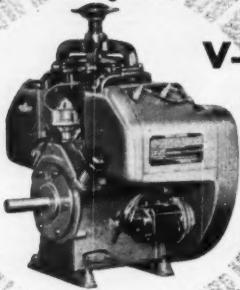
**V-Type Four-Cylinder**

**WISCONSIN**

**HEAVY-DUTY**

**Air-Cooled**

**ENGINES**



Model VE-4. V-type  
4-cylinder standard engine  
21.5 hp. at 2400 rpm.

On power jobs that call for rugged serviceability and sustained operation in the 15 to 30 hp. range, Wisconsin 4-cylinder engines rate first preference on the basis of such features as:

Trouble-free Air-Cooling at all temperatures from sub-zero to tropical highs; tapered roller bearings at BOTH ends of the extended crankshaft to take up all thrust and radial loads (also inherently self-cleaning); rotary type, high tension OUTSIDE Magneto equipped with Impulse Coupling for quick starting in any weather and sure firing on the job; individual oil stream to each connecting rod (other parts lubricated by oil spray) assuring complete and thorough lubrication at all times.

V-type design permits a shorter crankshaft and less height than with a "straight-in-line" engine, assuring a more compact power unit.

4-cycle single cylinder models, 3 to 9 hp., and 2-cylinder models, 7 to 13 hp., also available. Detailed data on request.



## YOU'LL WANT TO READ THIS STORY OF THE MOVING PROFESSION!

Whether you are concerned with moving cottages or city blocks, you will want to read this fascinating story of sixty years with the E. W. LaPlante Co. See how one of the nation's outstanding organizations of moving engineers has "juggled" millions of tons—safely!

For your free copy of "Moving with the E. W. LaPLANTE CO." write now to:

**THE E. W. LAPLANTE CO.**  
2325 EAST 46TH ST., INDIANAPOLIS, IND.  
**NO JOB TOO BIG... NO PROBLEM TOO TOUGH!**

(Continued from page 155)

**United States Plywood Corp.** has opened its thirtieth warehouse at 2734 Middlebrook Pike, N.W., Knoxville, Tenn., to be managed by Carl W. Justice. New unit will supply complete line of Weldwood plywood, decorative imported and domestic hardwoods and flush doors.

**Link-Belt Co.**, Chicago, has opened a factory branch and warehouse at 2630 Holmes St., Kansas City, Mo., carrying stocks of conveying and power transmission machinery parts, chains, sprockets, bearings, speed reducers, and elevator buckets.

**H. K. Porter Co., Inc.** has acquired Quaker Rubber Corp. of Philadelphia.

**Caterpillar Tractor Co.** has designated T. R. Farley general manager of new plant to be located 2 mi southwest of Joliet, Ill.

**International Harvester Co.** will construct new engineering building opposite company's Fort Wayne works, under a \$6,500,000 appropriation. Building, covering 250,000 sq ft, will house engineering facilities for motor truck division.

**Dravo Corp., Pittsburgh, Pa.** has purchased large pipe-fabricating plant at Marietta, Ohio. Facilities were formerly owned by International Derrick & Equipment Co.

**Maine Truck-Tractor Co., Portland, Me.**, has moved to larger quarters in new brick building at 1079 Forest Ave.

**Cummins Engine Co., Inc., Columbus, Ind.**, opened recently constructed \$100,000 plant in Memphis, Tenn., equipped to handle sales and service of diesel engines.

## Miscellaneous

**Homelite Corp.**, Port Chester, N. Y. announces creation of four new territories in the southeast with headquarters in Memphis, Tenn., Charlotte, N. C., New Orleans, La. and Jacksonville, Fla. The company also will maintain complete service and repair facilities in Atlanta, Ga., and Birmingham, Ala.

**Ralph B. Carter Co.**: Fred E. Lewin has been promoted to executive vice-president and general manager.

**Mall Tool Co.**, Chicago, has acquired Hornet Industries, Ltd., of Guelph, Ont., Canada, chain saw producers.

**Koppers Co., Inc.**: Leo A. Kraemer is named operations engineer for the engineering and construction division of Koppers.



## Improving a Highway in Eastern Pennsylvania



Francis C. Wagman (at left), and George A. Wagman, contractors, refer to blueprint in checking progress of job.

Continuing its highway improvement program, the Pennsylvania Department of Highways recently authorized relocation of 4913 ft of Route 24, near York, Pa. Included in the construction of the new 2-lane road were two reinforced concrete bridges. Contractor: G. A. and F. C. Wagman, Inc., Dallastown, Pa. In addition to structural steel and bridge reinforcing, Bethlehem furnished dowel units, cable guard rail, and steel posts.

### BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

*On the Pacific Coast Bethlehem products are sold by  
Bethlehem Pacific Coast Steel Corporation  
Export Distributor: Bethlehem Steel Export Corporation*

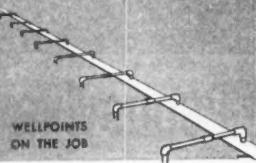
## STEEL FOR HIGHWAYS

Dowel Units • Reinforcing Bars • Bar Mats • Guard Rail  
Guard Rail Posts • Wire Rope and Strand • Pipe  
Hollow Drill Steel • Spikes • Bolts and Nuts  
Timber Bridge Hardware • Tie-Rods  
Sheet- and H-Piling • Fabricated Structural Steel



BETHLEHEM  
STEEL

# dewater the Complete way



Pre-drainage with Complete Wellpoint Systems prevents trouble wherever subgrade water is a problem. By eliminating the water hazard, you usually eliminate any need for sheeting — you often are able to continue operations even in sub-zero weather — you frequently can use equipment which "wet grounds" would rule out — and you always can count on completion in scheduled time at scheduled costs!

Write today for Complete catalog Dept. CM

## COMPLETE MACHINERY & EQUIPMENT COMPANY, INC.

36-40 11th STREET  
LONG ISLAND CITY, N. Y.

Branch Warehouse  
3rd AVE & ADAMS ST.  
GARY, INDIANA

**COMPLETE  
WELLPOINT  
SYSTEMS**  
FOR SALE OR RENT

## Advertisers in this Issue

Air Reduction Sales Co.	37
Alemite Div., Stewart-Warner Corp.	35
All-Purpose Spreader Co., The	124
Allis-Chalmers	118, 119
American Chain & Cable Co., Inc. (American Cable Division)	26
American Hoist & Derrick Co.	123
Athey Products Corp.	68
Atlas Powder Co.	140
Austin, Inc., John	71
Austin-Western Co.	22
Barber-Greene Co.	125, 126, 127, 128
Barco Mfg. Co.	39
Bart, Clinton, Inc.	153
Beaver Art Metal Corp.	121
Beaver Pipe Tools, Inc.	67
Bethlehem Steel Co.	74, 132, 157
Blaw-Knox Div., Blaw-Knox Co.	64, 106
Bucyrus-Erie Co.	2, 3
Butler Bin Co.	112
Carter Co., Ralph B.	108
Caterpillar Tractor Co.	12, 13
Chevrolet Motor Div., General Motors Corp.	135
Cities Service Oil Co.	14
Cleveland Trencher Co., The	109
Clipper Mfg. Co.	31
Coffing Hoist Co.	110
Complete Machinery & Equipment Co., Inc.	158
Concrete Termite Drill Co.	108
Construction Machinery Companies	136
Continental Motors Corp.	103
D-A Lubricant Co., Inc.	133
Dempster Brothers	33
Detroit Diesel Engine Div., General Motors Corp.	30
Diamond Chain Co., Inc.	92
Dixon Valve & Coupling Co.	131
Duff-Norton Mfg. Co., Inc.	141
Electric Tamper & Equipment Co.	142
Electric Wheel Co.	130
Ellicot Machine Corp.	124
Euclid Road Machinery Co., The	7
Farquhar Co., A. B.	101
Federal Machine & Welder Co., The	67
Ford Motor Co. (Truck Division)	99
Galion Allsteel Body Co., The	75
General Electric Co.	2nd Cover
General Tire & Rubber Co., The	19
Goodall Rubber Co.	147
Goodrich Co., The B. F.	1
Goodyear Tire & Rubber Co.	40
Grace Mfg. Co., W. E.	130
Griffin Wellpoint Corp.	114
Gulf Oil Corp.	23
Harnischfeger Corp.	90, 91
Haynes Products Co.	159
Heil Company, The	76, 77
Heltzal Steel Form & Iron Co.	81
Hermitage Portland Cement Co.	89
Hetherington & Berner, Inc.	144
Hewitt-Rollins, Inc.	117
Hill Corp.	6
Hough Co., The Frank G.	24, 25
Huber Mfg. Co., The	69
Hyster Co.	61
International Harvester Co., Inc. (Industrial Power Division)	84, 85
Iowa Mfg. Co.	91, 95
Jaeger Machine Co., The	29, 131, 158
Johns-Manville	120
Koehring Co.	16, 17
LaPlante Co., The E. W.	156
Lehigh Portland Cement Co.	28
LeTourneau, Inc., R. G.	20, 21
Lima Shovel & Crane Div., Lima-Hamilton Corp.	145
Lincoln Electric Co., The	100
Lindberg Engineering Co.	111
Link-Belt Speeder Corp.	83
Lone Star Cement Corp.	5
Lucey Boiler & Mfg. Corp.	107

(Continued on page 160)



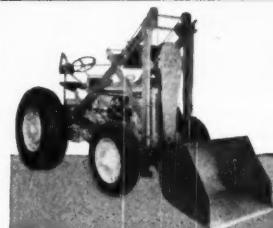
New 2" aluminum  
pump weighs 105 lbs.,  
pumps 9000 gph . . .  
Gives high head  
performance for price  
of low head pump.



Extra power and double  
priming action to de-  
water faster. Built to  
outlast cheaper pumps  
by thousands of hours.



THE JAEGER MACHINE COMPANY  
Columbus 16, Ohio



## FRONT END LOADERS

for Industrial Tractors  
Extensible Booms—8' Lift  
1/2 and 5/8 cu. yd. Capacity

### Other Products

## CONCRETE VIBRATORS

Gasoline Engine and  
Electric Motor Driven Models

## HEATING KETTLES

for Asphalt and Tar

## AGGREGATE DRYERS

for Stone and Sand

## ASPHALT PLANTS

Portable — Stationary

WRITE FOR CIRCULARS

**White Mfg. Co.**

ELKHART

INDIANA

# WHERE TO BUY

## Waterproof with Formula No. 640

A clear liquid which penetrates 1" or more into concrete, brick, stucco, etc., seals—holds 1250 lbs. per sq. ft. hydrostatic pressure. Cuts cost; applies quickly—no mixing—no cleanup—no furring—no membranes. Write for technical data-free sample.

HAYNES PRODUCTS CO., OMAHA 3, NEBR.

### REPLIES (Box No.):

Address to office nearest you

NEW YORK: 330 W. 42 St. (18)

CHICAGO: 520 N. Michigan Ave. (11)

SAN FRANCISCO: 68 Post St. (4)

### POSITION VACANT

JUNIOR MECHANICAL Engineer. For work involving processing equipment, materials handling, mill building alterations. Length of job approximately 2 years. Salary open. Give age, education, experience and salary desired in first letter. Address applications to G. M. Shook, Chief Engineer, The Monarch Cement Company, Humboldt, Kansas.

### BUSINESS OPPORTUNITY

#### Patented Machine

washed venetian blinds. Highly profitable. Visit one of 50 successful plants near you. Free Booklet. \$635.00 in 24 payments. C. C. Equipment Co., 101 S. 44th St., Phila. 4, Pa.

#### MANUFACTURER REPRESENTATIVES NEEDED

Old, established manufacturer of road machinery in mid-west has opportunities for energetic men in field of heavy construction equipment—men 25 to 38 years of age with experience in operating, servicing or selling construction machinery preferred. College education desirable. Details enclosed in reply. Send resume, recent photograph.

RW-6298, Construction Methods & Equipment  
520 N. Michigan Ave., Chicago 11, Ill.

## SUBMERGED PIPE LINE CONSTRUCTION

### BOYCE COMPANY

Phone 3-2530 Clearwater, Fla.

## WILL SACRIFICE brand new Caterpillar W-10

Bottom Dump Wagon (Minus tires), for use with Caterpillar DW10. Located in Pennsylvania.

PRICE \$5000.00

Reply to:

GEO. W. CROTHERS Ltd.  
LEASIDE, Ontario, Canada

## WINCH TRUCKS with UTILITY BODIES

We have 20 Fords and Brockways with transmission winches and derricks that were formerly used by the Telephone Co. They are in extra good mechanical condition and are suitable for Electrical Contractors, Tree Work or many other lines of construction.

Prices range from \$400.00-\$750.00  
One 1948 FORD—Completely equipped—extra clean \$2250.

**WARREN E. McCARTHY, Inc.**  
241 Mystic Avenue Medford 55, Mass.  
Tel.—MYStic 6-7346

# SEARCHLIGHT SECTION

Classified Advertising

EMPLOYMENT:  
BUSINESS:

"OPPORTUNITIES"

EQUIPMENT  
USED OR RESALE

## Surplus SALE!

### PORTABLE MULTI-USE POWER SAW

SAVE  
\$300  
WAS \$300.00  
NOW \$188.00

FOR MINNEAPOLIS, MINNESOTA



America's greatest saw  
bargain! Cuts lumber to  
4" thick. Briggs & Stratton  
3 1/2 H.P. gas engine.  
Saw cuts blue lining,  
transite pipes, steel  
sheets, copper & aluminum,  
etc. Does work of  
\$1,000 worth saw equipment.  
Sharpens tools.  
Famous make, brand  
new, original crates. Lim-  
ited supply. Send for  
literature. Dept. CMS

At (128)

**ENNIS SUPPLY CO.**

334 1st St. N., Minneapolis 1, Minn., U.S.A.

## FOR SALE! 4" FLANGED GATE VALVES

New unused 500 lb. w.p., 1,000 lb. test, semi-  
steel body, standard 300 lb. R. F. flanges,  
bronze salt-water resistant trim Gate Valves.

Manufacturer equivalent money-back guarantee.  
Complete with lockable hand wheel, 16  
alloy studs and nuts, and two asbestos flange  
gaskets. Manufacturers list price \$89.11.

Priced to sell at:

1-10 units	\$17.50	51-100 units	\$13.75
11-25 units	16.25	101-250 units	13.00
26-50 units	14.50	251-500 units	12.50

Write, Wire or Phone

**HOUSTON EQUIPMENT CO., INC.**

Pipe Line Machinery, Equipment and Supplies

5513 Clinton Drive PR-9968

HOUSTON 20, TEXAS

FOR SALE—One Bucyrus-Erie — 22-B, 5/8 yd.  
dragline and backhoe attachment, two years old.  
Serial #59381.

One 1020 5/8 yd. Unit, dragline, clamshell, backhoe  
combinations, four years old. Serial #2143.

**LINDBLOM EXCAVATING CO.**

1117 44th St., Rock Island, Ill. Phone R.I. 6-2817

## NEW WAR SURPLUS UTILITY TRAILERS



3 or More \$75.00 Ea

This trailer is excellent for moving air compressors, welding and heating plants. Also, this trailer which can be attached to a pickup or passenger car for all sorts of light tools, equipment and material handling. Capacity 1 ton. Four pneumatic Firestone tires, size 900x20. Timken bearing wheels; heavy steel frame. Originally designed for the Army as a "utility trailer".

SPECIFICATIONS—57" from front to rear axle. 39 1/2" width between wheels, 97" overall length, 42" overall width. Weight 605 lbs. Complete with four Firestone 6-60 9-16 P.M. Timken-bearing wheels.

### JACKS

NEW  
RATCHET LEVER  
15-TON JOYCE  
No. 1928-A



\$22.50 \$18.00  
EACH EA  
LOTS OF 6

List Price About \$72.00

\$12.00 EACH

### CABLE SLINGS

SIMPLE CABLE SLINGS  
20 Ft. long. Socket opening 3" x  
1 1/2". 1/2" diameter cable. New  
—in original packages.

\$12.00 EACH

DOUBBLE CABLE SLINGS  
25 Ft. long. Socket opening 3" x  
1 1/2". 1/2" diameter cable. New  
—in original packages. 2 Hooks.  
Regular List Price \$75.00  
\$18.00 EACH

TERMS: Net 10 days to rated com-  
munity. Others please send check with  
order. All items F.O.B. Cincinnati

### LIQUIDATOR'S SALES CO.

1612 READING ROAD  
CINCINNATI 2, OHIO

Need  
STEEL SHEET  
PILEING?  
RENT IT!  
"Faster From Foster"

ALL LENGTHS, ALL SECTIONS  
Also Corrugated Steel Piling

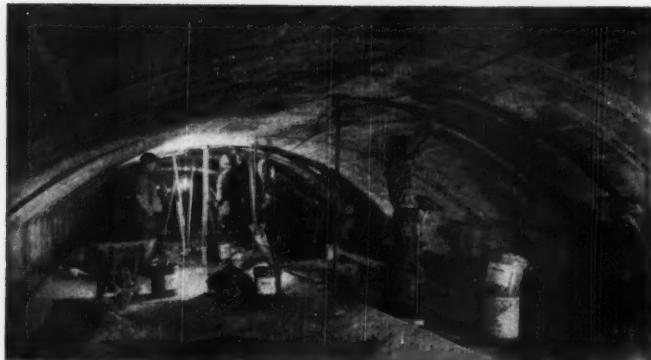
GUARANTEE: All material rigidly inspected  
before shipment—if upon your inspection  
it is not exactly as represented—it is  
refundable, freight both ways, at our expense.

RENTALS  
LB FOSTER

Portable American Steel Dredge Hull  
26 x 84 x 5 with spud rigging \$4900.00

FS-6217 Construction Methods & Equipment  
520 N. Michigan Ave., Chicago 11, Ill.

# Underneath the river



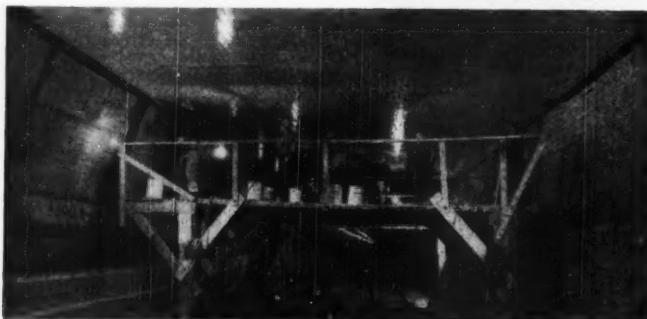
THORITE Patching Mortar Crew at work in Air Tunnel under East River, New York.



Sealing Leaks in Traffic Tunnel with WATERPLUG.



Sealing Drain Pipe Channels in Tunnel with WATERPLUG.



WATERPLUG Crew at work, before placing of tile lining, Battery Tunnels, East River, New York.

On many of the largest underground projects in the Americas and in foreign countries, WATERPLUG solves, for the contractor, his water problems. The job may be small or it may be large, the results are the same—Successful.

Get our 20-page brochure, pictorially describing, in detail, "How To Do It." It's yours for the asking. — No. 140.

**Standard Dry Wall Products**  
BOX X, NEW EAGLE, PENNSYLVANIA



## Advertisers Index

(Continued from page 158)

Manhattan Rubber Division.....	80
Martin Machine Co. ....	79
Master Builders Co., The.....	3rd Cover
Master Vibrator Co. ....	133
McAaffrey-Ruddock Tagline Corp. ....	146
McGraw-Hill Book Co., Inc. ....	151
McKiernan-Terry Corp. ....	152
Mixermobile Mfrs. ....	129
Moretrench Corp. ....	60
Motorola, Inc. ....	148
Naylor Pipe Co. ....	137
Northwest Engineering Co. ....	11
Onan & Sons, Inc. D. W. ....	136
Owen Bucket Co., The. ....	98
Paris Manufacturing Co. ....	93
Patent Scaffolding Co., Inc. The. ....	134
Perfection Steel Body Co., The. ....	88, 102
Prime-Mover Co., The. ....	113
Raybestos-Manhattan, Inc. ....	80
Reo Motors, Inc. ....	143
Rodgers Hydraulic, Inc. ....	82
Rogers Bros. Corp. ....	110
Ruemelin Manufacturing Co. ....	114
Salem Tool Co., The. ....	114
Schield Bantam Co., Inc. The. ....	115
Schramm, Inc. ....	10
Shunk Mfg. Co. ....	108
Standard Dry Wall Products.....	160
Standard Oil Co. (California).....	32
Standard Oil Co. (Indiana).....	149
Standard Steel Works. ....	122
Stang Corp., John W. ....	107
Stemco Corp. ....	72
Sterling Wheelbarrow Co. ....	121
Symons Clamp & Mfg. Co. ....	4
Templetton, Kenly & Co. ....	151
Texas Company. ....	8, 9, 105
Thermold Company. ....	27
Thew Shovel Co., The. ....	65
Timken Roller Bearing Co. ....	57
Traylor Engineering & Mfg. Co. ....	15
Tulsa Winch Div., Vickers, Inc. ....	116
Union Metal Mfg. Co., The. ....	139
Unit Crane & Shovel Corp. ....	138
Universal Engrg. Corp. Div., Pettibone Mulliken Corp. ....	18
Universal Manufacturing Corp. ....	131
Universal Road Machinery Co. ....	154
Viber Company. ....	155
Vulcan Iron Works. ....	86
Wachs Co., The E. H. ....	104
Wellman Engineering Co., The. ....	154
White Co., David. ....	146
White Manufacturing Co. ....	158
Whiteman Mfg. Co. ....	73
Wisconsin Motor Corp. ....	156
Worthington Pump & Machy. Corp. ....	4th Cover

### SEARCHLIGHT SECTION

(Classified Advertising)

#### Employment

Position Vacant.....	159
Selling Opportunities Offered.....	159

#### Special Services

Contract Work.....	159
--------------------	-----

#### Business Opportunities Offered

.....	159
-------	-----

#### Equipment

(Used or Surplus New) For Rent.....	159
For Sale.....	159

# The **MASTERPLATE** "IRON-CLAD" CONCRETE FLOOR



WEAR  
RESISTANT

SPARK-  
SAFE

NON-  
DUSTING

CORROSION  
RESISTANT

EASY-TO-  
CLEAN

NON-SLIP  
SURFACE



**"IRON-CLAD"** means  
4 to 6 Times Longer Floor Life  
Plus

- WEAR RESISTANT
- SPARK RESISTANT
- STATIC DISSEMINATING
- NON-DUSTING
- CORROSION RESISTANT
- EASY-TO-CLEAN
- NON-SLIP SURFACE
- ECONOMICAL
- BUILT-IN-COLOR

(11 Colors, also Plain. Can be  
scored to give tile-like effect.)

Many Million Square Feet Of  
Masterplate Floors In Service

•

Write For New 36 Page Illustrated  
Booklet Giving Full Information.

**the** **MASTER** **BUILDERS**  
CLEVELAND, OHIO TORONTO, ONTARIO

# Four Good Reasons Why I'm Banking on BLUE BRUTES

LARRY DEMAYO

Philadelphia  
Contractor

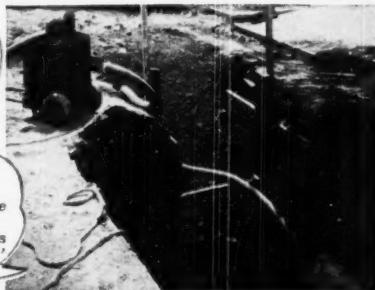


Larry DeMayo, an up-and-coming construction man, is getting his full share of important contracts in and around Philadelphia. He's also a steady customer for Blue Brutes. You'll know why when you

read the captions with these action-photos, taken on his drainage sewer job near Large and Rhawn Streets. And remember: these are not our claims . . . these are Mr. DeMayo's own words.



1. "The boys all want to run the Worthington spade. It turns out a lot of work without tiring them out."



2. "That pump (7M) really throws out the water. I'm going to get another one just like it. It's the best pump I've ever seen."



3.  
"The WB-51 is a great gun. It gives us no trouble at all. It hits hard but doesn't wear out the operator."



4. "This Worthington 105' compressor is the best there is. I won't have anything else on my jobs. I use Blue Brutes exclusively."

As far as we're concerned, that's the Blue Brute story. After all, job testing is the only sure way to find out just how construction equipment will perform. And when a man who's using that equipment speaks up . . . it's time to listen!

We'd just like to add that Larry

DeMayo has plenty of company. All over the country Blue Brute users will tell you that for time-and-money-saving performance, quality materials and workmanship there's more worth in Worthington . . . Immediate deliveries from your nearby Worthington-Ransome Distributor.

See him for further facts, or write us direct.

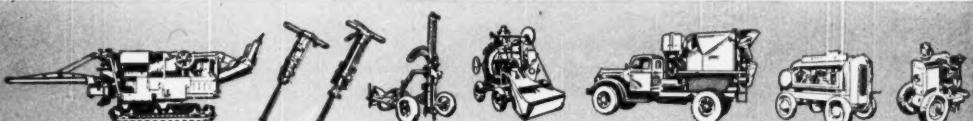
Worthington Pump and Machinery Corp.  
Construction Equipment Department  
Harrison, New Jersey  
Distributors In All Principal Cities

**WORTHINGTON**



HO-1

## BUY BLUE BRUTES



IF IT'S A CONSTRUCTION JOB, IT'S A BLUE BRUTE JOB